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NORTHWEST ENERGY NEWS

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New hope for their return...

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The Northwest Power Planning Council is required to develop a program to restore the Columbia fisheries and a regional electric energy plan, to be carried out by the Bonneville Power Administration, emphasizing cost-effective conservation and renewable resources

Editor: Dulcy Mahar
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THE HOOD RIVER CONSERVATION PROJECT

A few years ago, Verne and Mildred Kuhl decided it would be a good idea to weatherize their Hood River home. The wind slicing in from the Columbia River Gorge made their home of 43 years somewhat less than cozy on wintery nights.

So, they put some insulation in the windward wall and part of the ceiling and closed off certain rooms during the winter months. The Kuhls were ahead of many people in that they took even these measures. But, like most people who weatherize their homes, they went only part of the way.

As a result of a "here and there" approach to home energy conservation, it has been difficult to really gauge the effects of energy conservation on a whole community.

About two years ago, the Natural Resources Defense Council (NRDC), a nonprofit environmental advocacy organization, and Pacific Power & Light (PP&L), an investor-owned utility, came up with a "what if" idea. What if, they reasoned, we took an entire community and paid its homeowners to do everything right.

Thus began the Hood River Conservation Project, a two-year, $20-million research project designed to see just how much energy can be saved under nearly ideal conditions. Hood River, a city of 15,000, was selected because it represents a variety of conditions. An hour east of Portland on the Oregon side of the Columbia, it lies in the transition area between the western marine-influenced weather and the drier, more extreme climate east of the Cascades. The city climbs from river level up steep hills so that it embraces a variety of micro-climates.

NRDC and PP&L proposed the idea to the Bonneville Power Administration, which agreed to fund the project. This called for paying Hood River homeowners the full cost of tightening and insulating their houses to very high levels. The measures to be incorporated into the homes included heavy insulation, dehumidifiers and heat exchangers, glazing, caulking and weatherstripping, outlet and switchplate gaskets, electric water heater wraps, water flow regulators, and heat pump conversion where necessary.

The Northwest Power Planning Council, Northwest Public Power Association, and the Pacific Northwest Utilities Conference Committee joined NRDC, PP&L, and Bonneville in helping plan and design the project.

Approximately half the city's 6,100 homes are electrically heated and will be eligible for the program. An intensive marketing program is going on to interest homeowners in signing up. Given that there are no costs to the homeowner, a high level of participation is anticipated.

Even in its early stages the project has become the biggest communitywide conservation program of its kind, and Hood River proudly boasts it is the "Energy Capital" in a billboard outside the town.

Over 300 people had signed up for the project before the first house was weatherized. The Kuhls, whose house was first, held an "open house" for a "press party" announcing the project. Mildred Kuhl reported a bonus as a result of the full insulation in her home. Not only is it warmer now, but the noise has been cut down. "We don't hear the traffic even, and it used to be so loud. The youngsters down the street on skateboards don't rouse us anymore," she said.

Peter Johnson, administrator of Bonneville, said of the project, "This represents the theme of the regional Planning Council. We believe in the development of (conservation) capability."

COMING NEXT: The project involves highly sophisticated monitoring systems installed in 320 sample homes to record before and after patterns in energy use. ENERGY NEWS will carry a story on the monitoring phase of the project in the near future.

IN THE NEWS

Godard

Lee

Hampson

Photos by Linda Sullivan and Oregon Dept. of Transportation

Two new faces join Council

Two new members have recently joined the Northwest Power Planning Council. Kai Lee, an associate professor from the University of Washington, was named last fall by Washington Governor John Spellman to replace Dan Evans, who was appointed to the U.S. Senate. Oregon Governor Victor Atiyeh recently named nuclear engineer Donald Godard to replace Alfred Hampson, on the Council. Hampson declined appointment to another term in order to devote more time to his law practice.

Lee, 38, who teaches environmental studies and political science, is also an adjunct faculty member for the Institute of Marine Studies and on the board of the Applied Physics Laboratory. He had also served as a White House Fellow to the Secretary of Defense.

He is known for considerable research and had served as a consultant to the Council prior to his appointment. He prepared "The Path Along the Ridge," a framework for flexible planning that was later adopted into the Council's 20-year plan. He has a bachelor's degree in physics from Columbia University and a Ph.D. from Princeton University.

Godard, 36, has been administrator for the siting and regulation division of the Oregon Department of Energy. Previously, he was an assistant manager for Teledyne Wah Chang in Albany, Oregon, and had also served as a member of Admiral H. G. Rickover's staff in the Navy's reactors division in Washington, D.C.

He holds a bachelor of science and engineering degree from Oregon State University and a master of science and engineering from the University of Illinois.

Both men were appointed to three-year terms and are subject to approval by their state legislatures.

Hampson retires from Council

Alfred Hampson, Oregon, announced his retirement from the Northwest Power Planning Council to devote full time to his law firm of Hampson, Bayless & Murphy.

Hampson was best known on the Council for his work in the fish and wildlife program. He was also unofficially the Council's "resident grammarian" and the person most credited with keeping the 20-year plan in plain and proper English.

Hampson has been chairman of Oregon's State Energy Facility Siting Council and chairman of the state Travel Information Council. He is a former member of the Salmon Advisory Committee to the state Department of Fish and Wildlife.

He graduated from Stanford University and received his law degree from Harvard Law School.

NOTICE

BPA Billing Credits Policy: Petition for Review Filed

On September 23, 1983, BPA published its final Billing Credits Policy, creating a mechanism for channeling BPA payments to independent developers of conservation and generating resources. The Natural Resources Defense Council (NRDC) and the National Wildlife Federation (NWF) have filed a petition for review in the Ninth Circuit Court of Appeals challenging certain provisions of the Policy, which waive cost-effectiveness requirements for generating resources that are candidates for billing credits. Copies of the NRDC/NWF petition can be obtained by calling or writing the BPA Office of Public Involvement, P.O. Box 12999, Portland, OR 97212 (1-800-547-6048).

Wendy Walin illustration

Amendments submitted for F & W plan

Some 139 amendments from 28 entities have been proposed for the Northwest Power Planning Council's fish and wildlife program, according to Jan Chrisman, director of the Council's fish and wildlife division.

The bulk of the amendments, 58, deal with fish propagation (section 700 of the program). Another 31 amendments address resident fish (section 800) and 19 deal with wildlife (section 1000).

Other program areas receiving proposed amendments included downstream migration (section 400) ten; upstream migration (section 600) six; Yakima River Basin (section 900) five; ocean survival (section 500) and future hydroelectric development (section 1200) three each; and program goals (section 200) and coordination of river operations (section 1300) two each.

No amendments were sent in for the water budget (section 300) and the fish and wildlife committee section (1100).

The amendment process was built into the Council's fish and wildlife program to provide flexibility and fine-tuning and to allow for implementation problems which could not have been foreseen, according to Edward Sheets, the Council's executive director.

Entities proposing amendments included the U.S. Bureau of Land Management, U.S. Army Corps of Engineers, Indian tribes, state fish and game departments, utilities, the U.S. Forest Service, Crown Zellerbach, fish and wildlife agencies and organizations, and private individuals.

Copies of the proposed amendments will be available in February. Information for obtaining the amendments is featured in a box in this issue of *Energy News*.

The Council and its staff will review all amendments through June of this year. This process will include public hearings, consultations with interested parties, discussion of staff issue papers at open meetings, and acceptance of written comments.

Public hearings on the amendments will be held in each state.

New twist on fish and chips

Someone has finally come up with the quintessential "fish and chips" story.

The U.S. Department of Energy announced that fish researchers plan to implant a computer chip, about the size of a grain of rice with tiny antennae, into young fish. The chip will allow scientists to track salmon and steelhead as they migrate to the ocean and back. The tag, developed by a private firm working with the National Marine Fisheries Service, is expected to become widespread at Northwest hatcheries by 1988. Bonneville Power Administration is funding the project.

A scientist will be able to aim a decoder or data scanner at each dam's fishway and retrieve information on the same fish at several stations. This will permit fish managers to locate juvenile fish moving downstream to the ocean and determine the best time to release water from the dams to make their trip easier and safer.

Each chip can store 34 billion separate codes and has a service life of 100 years.
The only problem left to researchers is figuring out where to insert the chip so that it won't harm the fish or end up on someone's dinner table as, literally, fish and chips.

Tacoma adopts new standards for conservation

This 2,500 square-foot home was built by Hopper Construction Company of Tacoma, Washington, to the model conservation standards. It features insulation (walls R-26, ceiling R-45, floor R-25), 6 mill visqueen vaper barrier, double-glazed wood frame windows, and an air-to-air heat exchanger.

Hopper Construction photo

Tacoma, Washington, became the first city in the region to adopt new building codes which comply with the Northwest Power Planning Council's model conservation standards.

The ordinance, which will go into effect June 1, 1984, covers all new residential and commercial buildings, remodels, and additions constructed after that date. Early adoption will qualify the city of 160,000 population for financial incentives provided by the Bonneville Power Administration to cover local enforcement.

The model standards set "energy budgets" for the space heating of residential homes and offer a number of ways to meet those budgets such as insulation, glazing, heat pumps, solar features, and control of air leakage. For commercial buildings, the standards also set efficiency requirements for equipment used to heat, ventilate, air condition, and light the buildings.

The model conservation standards are part of the Council's 20-year power plan which emphasizes conservation as its priority. Emphasis was put on new buildings, according to Edward Sheets, executive director of the Council, because of studies which show the cost of introducing energy saving features into existing homes is approximately twice as much and produces far lower energy savings.

Sheets also pointed out that the standards do not represent a dramatic departure for Northwest builders. "Many of the residential standards are nearly identical to the energy conservation guidelines recommended by the National Association of Homebuilders. The standards for commercial buildings are very similar to those already in Oregon and Washington codes, while the lighting standards for large office buildings are patterned after those adopted in California," he explained.

Sheets said the Council considered three factors in developing the model standards — benefits to the region, to the local economy, and to the consumer. "These energy-saving features will mean more comfortable homes, more jobs in the local labor force, and lower energy bills for the entire Northwest," he said.

Model program 'rates' home energy efficiency

A model program developed by shelter industry representatives seeks to integrate energy efficiency considerations into the home mortgage process. The program uses a Uniform Energy Rating System to determine a home's energy efficiency.

The rating system measures the heat-keeping performance of a house and estimates its annual energy use and energy cost. After the appraiser has determined a house's energy performance, the house is given one of five ratings, from "Poor" to "Very Efficient." The rating can then be used by consumers and by the shelter industry in evaluating the affordability of a home.

An energy-efficient home enhances a homeowner's ability to make monthly mortgage payments because less money is required for utility expenses. As more lending institutions allow higher loan-to-debt ratios on homes that are very efficient more people qualify to buy a home. In Washington state, about 7 percent more of the population could qualify to buy an average-priced house if energy efficiency was taken into account.

"The real benefit of the Shelter Industry Program is that it provides the way for the market place to incorporate and promote energy efficiency through voluntary industry efforts," said John Teutsch, Jr., chairman of the Washington State Shelter Industry Advisory Committee and president of Rainier Mortgage Company.

The program has been endorsed by the Better Home Loan Mortgage Corporation ("Freddie Mac") and the Federal National Mortgage Association ("Fannie Mae"). Both have agreed to allow their lenders to increase the loan-to-debt qualifying ratios for families who want to buy energy efficient housing.

The program is presently underway in the Puget Sound area and will soon get underway in the Portland metropolitan area. Ten lending institutions in the Puget Sound area are now using the Uniform Energy Rating System. More than 150 Puget Sound real estate appraisers have received training on the use of the rating system. In June of this year, more than 375 energy rating sheets were completed by appraisers for banks.

"The program is unique because it was started and run by the shelter industry," said Jay Luboff, director of Western Resource Institute, which developed the program. "Consequently, we've been able to develop a common reliable, uniform language that is useful to lenders, appraisers, realtors, builders, and utilities alike."

Initial funding for the program's development was provided by the Washington State Energy Office, with later support from the Oregon Department of Energy and Pacific Power and Light.

The Northwest Power Planning Council endorsed the Shelter Industry Program including it in the Two-Year Action Plan, part of the Council's 20-year Northwest Electric Power and Conservation Plan.

The two-year plan directs Bonneville to support the regionwide implementation of a uniform residential energy efficiency rating system. Consistent with this recommendation, Bonneville is providing the bulk of the funding necessary for the program's expansion into Oregon, Idaho, and Montana.

"The rating system developed by the shelter industry epitomizes the conservation programs the Council envisioned in its plan," said Idaho Council member Bob Saxvik. "It was developed by the private sector and it relies on market mechanisms working through existing institutions."

Bonneville's home weatherization program got high marks from the Council.

BPA photo

Council praises BPA work on two-year plan

The Bonneville Power Administration won praise from the Northwest Power Planning Council for BPA's efforts toward implementing the Council's two-year action plan.

When it adopted its 20-year power plan last April, the Council also included a two-year action plan specifying actions various entities, particularly Bonneville, were to take in the immediate future. The two-year action plan included 115 action items for Bonneville.

In December, the Council completed a detailed review of BPA's first six months of progress in implementing the plan. The development of energy conservation among all consumer groups — residential, commercial, industrial, agricultural, and government — is the main thrust of the two-year action plan.

Bonneville got high marks from the Council for its efforts to meet interim conservation objectives, particularly in the residential sector. However, the Council did express concern that more effort is needed in other sectors. The agency was urged to put more attention and more of its budget into commercial, industrial, and agricultural sectors.

Specifically, the Council's letter suggested that Bonneville redirect a portion of its funds in the 1985 budget from existing weatherization and street and area lighting programs toward conservation efforts in nonresidential sectors. The Council also urged Bonneville to take the plan's five-year targets into account as it develops future budgets.

The Council's assessment of Bonneville efforts was based on detailed reviews of the agency's workplans as well as meetings between Bonneville and Council staff.

Based on that review, the letter, signed by Council Chairman Keith Colbo, stated, "Bonneville appears to be on the path to successfully implementing the plan. The Bonneville staff has made a good faith effort to meet the plan's requirements."

Inter-Tribe letter critical of BPA

The Columbia River Inter-Tribal Fish Commission (CRITFC) has sent a letter strongly critical of the Bonneville Power Administration to the Northwest Power Planning Council.

The letter, signed by CRITFC Executive Director Timothy Wapato, centers on the goals study (section 201) of the Council's Fish and Wildlife Program. It accuses Bonneville of "standing in the way of implementing what many consider to be the very cornerstone of the Council's Fish and Wildlife Program."

Section 201 of the program calls for Bonneville to fund a study by the fish and wildlife agencies and tribes to identify salmon and steelhead losses due to the Columbia River hydroelectric system and to set goals for the restoration of the affected stocks.

The letter charges that Bonneville has delayed beginning the goals study, has failed to honor financial commitments to the Inter-Tribal Commission and individual tribes, and has made alternate proposals which are not consistent with the Council's fish and wildlife program.

The letter urges the Council to see that the 201 study is completed quickly and according to program directives because, as Wapato said, "many Northwest lives and livelihoods depend on salmon and steelhead."

The Council has placed the goals study as a priority item in its 1984 agenda.

Council finds for completion of WPPSS 3

WPPSS 3, the mothballed nuclear power plant at Satsop, Washington, is a good power buy for the region and should be completed, according to a resolution by the Northwest Power Planning Council.

The Council endorsed preservation of the plant at its November 2-3 meeting in Seattle after reviewing a major staff analysis on the cost-effectiveness of keeping or terminating the plant. The Council also heard public testimony from several groups.

In its motion to retain the plant, the Council also urged the region to seek a financing mechanism to resume construction of the plant, which is approximately 75 percent completed.

The Council also expressed concern over disparate financing problems facing the public and private owners of the plant, problems which could present a major threat to completing the project. While Bonneville owns 70 percent of WPPSS 3, private utilities own 30 percent.

While endorsing completion of the plant based on cost to the region and future power needs, the Council stopped short of saying when construction should resume. A staff analysis said that the cost differences between immediate restart and delayed restart were "too close to call."

Luce report tries to solve WPPSS puzzle

The in- and out-of-court saga of the Washington Public Power Supply System (better known as WPPSS) continued to grab headlines throughout 1983 and into 1984.

A major report designed to solve some of WPPSS' woes came out to mixed reviews in mid-November. The Luce report called for replacing WPPSS with a new federal entity called the Northwest Energy and Conservation Financing Corporation. The corporation would be run by seven directors appointed by governors and approved by the U.S. president.

The corporation, under the Luce proposal, would complete plants 1 and 3 (number 2 has just been completed) and assume legal liability for the 2.25 billion debt attached to plants 4 and 5.

The plan also called for a ten-year, 72 cents-a-month surcharge on all electric ratepayers in the Northwest to finance a payoff to bondholders for plants 4 and 5. The bondholders would receive about 36 cents for every dollar invested, with less going to speculators. The surcharge expected to raise about $81 million a year, would apply to customers of both private and public utilities whether or not they were members of the WPPSS consortium.

The 73-page document is the product of a blue ribbon panel appointed by the governors of Oregon and Washington. Headed by Charles Luce, former Bonneville administrator, the panel also included former Appeals Court Judge Herbert Schwab and United Airlines Chairman Emeritus Edward Carlson.

Luce was optimistic about the panel's proposal at its official unveiling. "I think the region is ready to settle this thing," he said. But Congress must approve any action, and most experts do not expect the WPPSS web will be untangled easily or swiftly.

The WPPSS plant 2 at Hanford received a low-power license from the Nuclear Regulatory Commission in late December and has begun loading fuel. The license will allow the plant to go to five percent power for a testing period. Approval for full power could mean the 1,100 megawatt plant will be in full operation by July 1984.

WPPSS photo

Linda Sullivan photo

Interview with the chairman

Colbo looks at the Council's future

Do you see the Council taking any major new directions in the immediate future?

I don't see any significant changes in direction. The path the Council has followed is very predictable. Our goals were laid down fairly explicitly by the Act.* We've engaged ourselves in meeting those goals in an arduous public process that has been hammered out in four states.

We do, however, face a change in the job that is now before us. We have made the transition from developing a 20-year plan and are into the stage of implementing it. Now the long-term work begins. We must fine-tune the plan, change and adapt it where that's needed, play watchdog to the region's power needs, test, and guide the implementation of both the energy plan and the fish and wildlife program.

When I think of all we have to do, I cannot help but be somewhat surprised that now that the plan has been developed some people are raising the question of the Council's future role.

If the Council were to go away, we'd be back where we were except that we'd have a great blueprint for the future — on paper. The plan, excellent though it is thanks to input from throughout the region, will be worthless if it stays on paper.

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*Pacific Northwest Electric Power Planning and Conservation Act

Now the long-term work begins.
We must fine-tune the plan, change and adapt it
where that's needed, play watchdog . . .

Has the fact that there is now an energy surplus taken some of the pressure off the Council's work?

That assumes that the only problem the region faces is an energy deficit and when we don't have a deficit, then we don't have problems. But we can and do have problems during an energy surplus. The WPPSS fiasco has shown us that developing unneeded, expensive energy is a problem at the other end of the spectrum. We need constant planning to prevent both extremes.

Another thing we cannot overlook is that the energy surplus deals primarily with only one side of the Council's work. We are not one-dimensional. The Act specifically charged us with balancing the needs of our fish and wildlife with our region's energy needs.

The Council's charge to dramatically improve the lot of the Columbia Basin's fish and wildlife may some day be an even bigger story than all the WPPSS headlines. Without an immense effort, the Northwest could easily lose one of its greatest natural resources.

In the next few months, we are going to be hearing much more from the fish and wildlife program, particularly since the amendment process has begun. This does not represent a new direction for us. Our interest has always been there. But, at times, the energy headlines overshadowed this important area.

What do you believe are the greatest challenges facing the Council now?

Keeping our momentum. We've got an excellent plan, but there are a lot of side issues that could distract us. It's critical that we stay focused. We've got to monitor our two-year action plan and Bonneville's response. We can't spread ourselves too thin.

Our most pressing business is to institutionalize the plan among the major participants in the region and to improve the plan. The plan has never been represented as perfect. Now is the time to begin the refinement process.

Our two-year action plan calls for developing a minimum of new resources, mostly conservation. The plan also calls for further studies, research, demonstration projects, and additional dialogue among the region's interests. After two years, the plan will be revised. That is one of the plan's strengths and a major reason why the Council is just beginning its work.

Even if nature cooperates, political, social, economic, and technological forces either alone or in combination could make significant changes in the region's needs.

Right now our most important task is helping the Bonneville Power Administration to lay the groundwork for a conservation delivery system, so that when the region does need more power, we will have the ability to deliver with the priority resource — conservation. I do have some concern that BPA's distraction with current cash flow problems and the Administration's concerns with the federal debt limit are a very real threat to conservation actions that must be taken now.

What is the likeliest scenario for the future of the region?

That's the most common question I encounter. The best answer to what the regional economy will do is that it will fall within a specific range. Our plan can respond to what happens within that range, and that's a great strength of our program. It is flexible. We've got to continue to maintain that kind of flexibility.

Abnormal occurrences, such as the unexpected loss of resources, will require this region to respond to maintain a reliable and cheap power supply. As required by Congress, the resources now contemplated by the Council include the successful completion and operation of WPPSS plants 1 and 3. But this is certainly a debatable assumption at this point.

We could be looking at a much different situation if these plants are not completed. Apart from the obvious financial impact on BPA and the private investors, immediate resource plans would be reviewed and updated. We have run our computer models to test against this happening to determine the responsiveness of the basic plan. While the plan will respond, it is only viable if it is followed in action and not delayed or frustrated.

Do you expect to see individual changes in Council members as the Council undertakes new leadership?

I expect the Council will mature as a cohesive group, and I expect changes in individual Council member's approaches. I think you will find individuals taking a

Linda Sullivan photo

The Council's charge to dramatically improve the lot of the Columbia Basin's fish and wildlife may some day be an even bigger story than all the WPPSS headlines.

more active role within their states as well as within the Council.

My feeling is that each member brings a unique background and strengths to the Council. I'd like to tap those strengths and backgrounds, and I think it will be easier to do so in this phase of our work.

Do you see any problems created by the rivalry for the chairmanship? Did that have any effect on the Council's stability?

As I view the Council at the time this was going on, there were seven people appointed by the governors of four states, all of whom were well qualified. All bring tremendous background and experience to the Council. Yet only one Council member could follow Dan (Evans). I'm not sure that that was an enviable thing to do.

It's natural the job was sought after. Sure there were strong feelings. But they are being put behind us. It's not the first time strong feelings have been expressed, and I expect there will be other times. But we've never failed to resolve our differences and work together for the region. After all, I was a compromise candidate, and that means compromise was possible.

Do you have special interests that may influence your participation in particular areas of the Council?

My particular background indicates administration. I will probably tend to look more to the internal operations of the Council now. I will free myself from some committee assignments so that I can focus on the general operations of the Council and its staff.

I may spend more of my time insuring that the public participation role is elevated. Council members also need to give more input and more direction. It's not enough to carry on public involvement within their states. This is a regional program.

Of course, I'll always have a soft spot for fish and wildlife, partly because of my background, but mostly because it is so important.

How would you characterize the Council? How is it unique? What are its strengths?

We are a unique organization. We've demonstrated the ability to respond to problems through a public process that had been untried. That process is terribly critical, and it will continue.

The public process was a charge Congress gave us, and it was truly unique. We carried it out, and I firmly believe in it. That doesn't mean I thought it would work as well when I took it on. Now I would not choose to do it any other way.

The Council is the region's forum, the one place where all the many interest groups can go. It is the neutral in a field where there are many players and many public interests. The Council has neither ownership in any interest nor does it espouse a cause outside its Congressional charge.

The Council also gets its strength from the plan's flexibility. It is designed to be changed as needed. The plan calls for a flexible mix of resources so that, regardless of what the future is, there will be a reliable supply of power.

I cannot overlook the Council's staffing as another one of its strengths. We had to assemble a first-rate team quickly, and we came up with one of the finest staffs in the Northwest. They've done a marvelous job in meeting goals and deadlines.

Finally, the thing that makes us truly strong and unique is that the Council represents a regional approach to problem solving. The entire region has an investment in the Council's success.

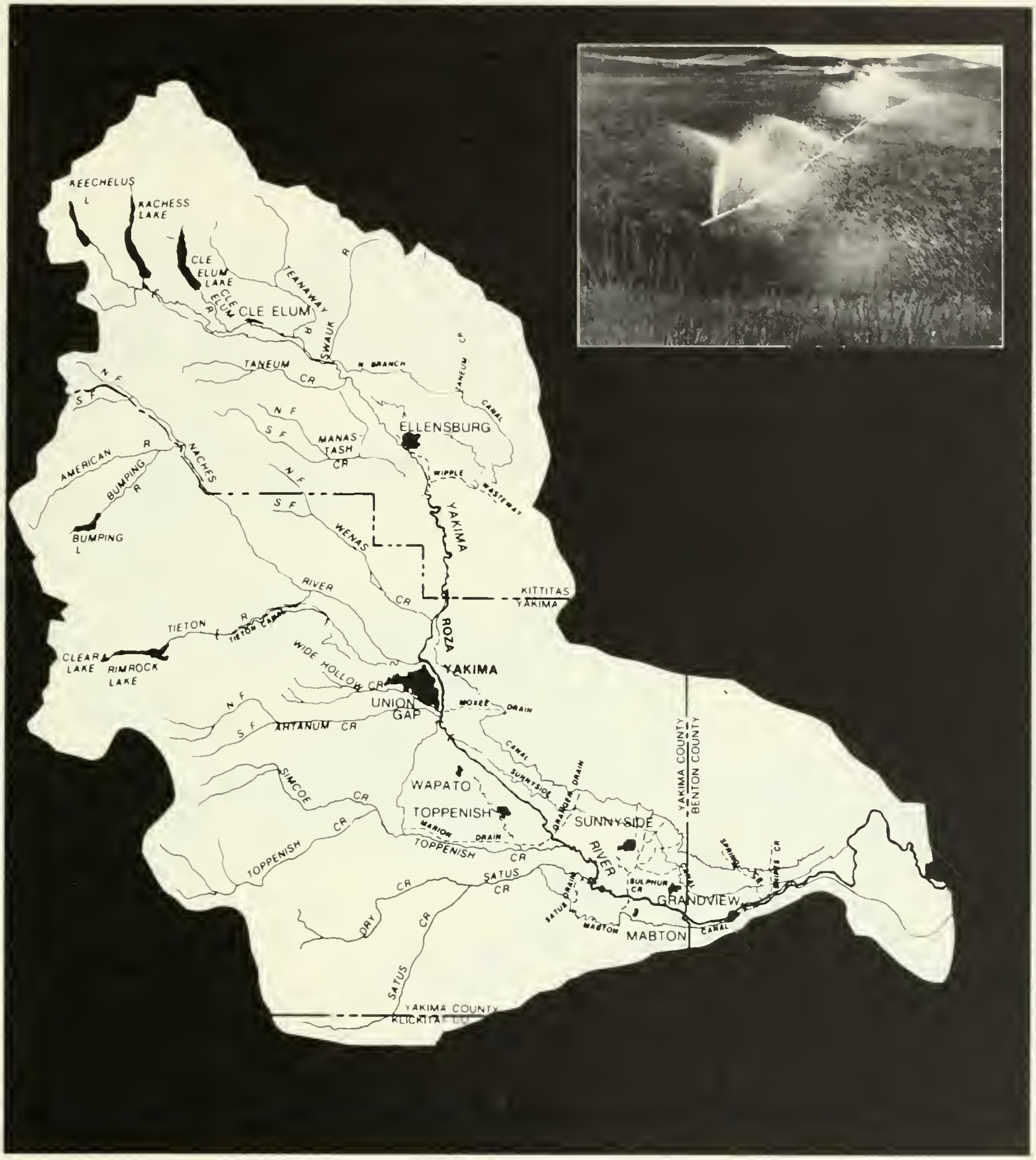
Do you think the Council could become a prototype for other similar regional groups in other parts of the country?

Possibly. I could think of no higher compliment than to be replicated in other regions. You don't need to have an energy problem for a regional group to work. We know energy fits the process, but it could be any other problem so long as it is an issue that binds the region together.

The public process was a charge Congress gave us, and it was truly unique.

We carried it out, and I firmly believe in it.

Linda Sullivan photo



New life for Yakima Basin

by Susan Skog

At one time, around 600,000 adult salmon and steelhead returned annually to the famed Yakima River basin, second only to the Columbia River in record fish runs. Members of the Yakima Indian nation freely harvested fish from the river, which now borders a 45-mile stretch of their reservation in central Washington.

Those days are but a memory now because the advent of agricultural development in south-central Washington in the early 1900s drastically altered the natural river flows in the basin. Nine diversion dams, numerous canals and storage reservoirs were erected in the basin to divert water for irrigation. Most of these water projects were built without fish ladders and screens.

In addition to the absence of proper passage facilities, the availability of water in

U S Dept of Interior photo

The ability of irrigation and fisheries interests and federal power agencies to overcome their differences and work for the enhancement of the Yakima is now being tested.

the Yakima basin is often in question. In low-water years, sections of the river below some diversion dams have occasionally been dry, ruling out any possibility of fish migration.

Despite such obstacles, the Yakima Basin is now recognized by agricultural, power and fishery interests as potentially a great resource for anadromous fish.

Recent progress in implementation of section 900 of the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program has renewed hope that, with proper passage facilities, salmon and steelhead populations in the Yakima could be increased to around 10,000. Section 900 of the Council's fish and wildlife program calls for the installation of ladders and screens at Yakima Basin water projects.

The ability of irrigation and fisheries interests and federal power agencies to overcome their differences and work for the enhancement of the Yakima is now being tested. But at the moment, most parties involved in the Yakima enhancement effort are optimistic that fish restoration efforts are on the right track.

"We're very encouraged by the active participation of the Council and BPA in moving the project forward," Regional Bureau of Reclamation Director William Lloyd, said. The need to erect fish passage facilities in the basin had been identified for years, he said. Recent efforts by the Council and BPA should provide the "capital and push to get it (enhancement effort) over the top."

Because many of the proposed projects are estimated to cost over $1 million and have a useful life of at least 15 years, Bonneville must have congressional approval of the spending before construction begins. BPA also needs approval to transfer these funds to the Bureau of Reclamation, which owns and/or operates most of the projects.

The Council has taken a lead role in designing an amendment to Senate Bill 1027 to secure the necessary authorization and has encouraged BPA and the Bureau of Reclamation to initiate the design phase of the work in expectation of legislation passage.

On an upbeat note, BPA recently executed an agreement with the Bureau to conduct pre-design work on some of the highest priority projects in the basin, which include Roza Diversion Dam, Roza Powerplant, Sunnyside Diversion Dam, Easton Diversion Dam, Wapato Diversion Dam, Toppenish Creek Diversion Satus Unit, and Old Reservation Canal.

The estimated budget for the FY84 pre-design work is $150,000. The work will include preliminary engineering studies, preparation of documents needed to satisfy the National Environmental Policy Act (NEPA), identification of the necessary construction permits, and preparation of construction schedules and cost estimates for each project.

The Bureau of Reclamation will be on a fast track to complete pre-design work by February 1984 for passage facilities at four of the Yakima water projects — Sunnyside, Old Reservation, Wapato and Toppenish Creek Satus Unit, as requested by the BPA.

BPA's plans for enhancement of the Yakima basin are "proceeding rapidly," according to Janet McLennon, BPA assistant power manager for natural resources and public services. "We are doing everything we have the authority to do and are seeking more authority to do things faster," she said.

BPA has also requested the Bureau of Reclamation to provide it with construction cost estimates for the Sunnyside, Wapato and Toppenish Satus facilities for inclusion in its budget requests which BPA Administrator Peter Johnson will deliver to Congress in February.

The Bureau of Reclamation is funding pre-design work at the Prosser Diversion Dam and the Washington Dept. of Ecology at the Horn Rapids Dam.

The Council hopes that construction of fish passage and screening measures at high priority projects can be completed by FY85 and that construction of all proposed projects will be final by FY87.

Most participants in the Yakima enhancement effort are encouraged that, after a frustrating impasse, some significant strides are being made.

Agency representatives are "putting their minds together to get the project off the ground," according to Walt Larrick, fisheries biologist for Yakima basin irrigation districts. "We finally have a process started . . . but it's just a beginning."

The irrigation districts he represents support the enhancement efforts underway in the basin, Larrick said. "We need to work it out so irrigation can co-exist with the fish" and no interest suffers, he added.

BPA's McLennan said she's optimistic the agency can "make significant contributions to improving conditions for anadromous fish runs." "We hope we'll get a top dollar result," she said.

The Council hopes that construction of fish passage and screening measures at high priority projects can be completed by FY85...

Wendy Wallin illustration

Water budget promises hope for migrating fish

by Susan Skog

Passage conditions for migrating anadromous fish were greatly improved in 1983, raising hopes that implementation of the Northwest Power Planning Council's water budget is off to a good start.

An above average water year coupled with more intensive coordination between the agencies which operate the Columbia River dams, fish and wildlife agencies, and Indian tribes provided better passage conditions for anadromous fish than in many past years. That upbeat assessment comes from the first annual water budget report recently submitted to the Council and the Bonneville Power Administration. The report was prepared by Malcolm Karr, the tribal water budget manager, and Mark Maher, water budget manager for fish and wildlife agencies in the Columbia River basin.

The Council's Columbia River Basin Fish and Wildlife Program, adopted in November 1982, calls for a "water budget" to improve streamflows on the mainstem of the Columbia River and the Snake River during spring migration of salmon and steelhead. The plan also calls for improvements to existing dams to aid migration and other measures to preserve fish and wildlife in the Columbia basin.

The Council's fish and wildlife program is funded and implemented by or through BPA, the Bureau of Reclamation, Corps of

Survival of downstream migrating juvenile salmon and steelhead in 1983 was estimated by fish and wildlife agencies to be the best since before 1975...

Engineers, and the Federal Energy Regulatory Commission — the four federal agencies with authority over hydroelectric projects in the basin.

The 1983 year is not officially considered a water budget year by the Corps of Engineers because an agreement between the owners and operators of the Columbia River basin hydroelectric system already was in place before the Council completed its program. But this past year was valuable as a trial run to test the abilities of the dam operators, agencies, and tribes to work together to manage the system.

Spring runoff conditions in 1983 were above average at the two water budget monitoring points — Lower Granite Dam on the Snake River and Priest Rapids Dam on the mid-Columbia — providing flows critical to fish during the spring migration between April 15 and June 15.

In fact, yearling chinook and steelhead migrated between Lower Granite and John Day dams in about 10 days. The water budget report indicates these travel times are the lowest for yearling chinook since 1973 (when estimates were first begun) and are the second lowest for steelhead.

This past year has been an excellent one for testing the flexibility of the hydropower system in dealing with the constraints of the water budget, according to Karr. To his surprise, the Columbia River dams have much more flexibility for all purposes — power production fish migration, and other uses — than previously realized, Karr says. "I feel comfortable about the ability to provide relatively good passage conditions for fish in any year."

The water budget managers say they used the past year to develop the close communication and monitoring needed to fine-tune the operations of the dams on a daily basis. The trust and communications established with all parties "is a must . . and we're gaining in that area," Maher said.

Monitoring the operations of the hydropower system on a daily basis has allowed the water managers to "anticipate" the needs of the fish and react quickly to make needed changes to aid fish migration, Karr said. As a result, there was more effort to protect anadromous fish than in the past and these efforts paid off. According to the report, "operation of traveling screens, transportation equipment, adult fishways, and spill and flow management were accomplished more efficiently and effectively in 1983 than in previous years."

Survival of downstream migrating juvenile salmon and steelhead in 1983 was estimated by fish and wildlife agencies to be the best since before 1975 when the lower Snake River projects were completed. Preliminary counts of adult migration of salmon, however, were still below average. Spring chinook counts at Bonneville Dam, for example, were 45 percent below the ten-year average. Some upriver counts were better, the report indicates. On the other hand, steelhead runs rose dramatically. Preliminary count of the steelhead run at Bonneville Dam indicates the run is the largest river return since at least 1973.

Due to the exceptional water year, the water budget managers came to grips with a problem which occurs during high water years — the increased presence of dissolved gas which can harm fish. During the spring runoff, when reservoirs are filled to capacity, the excess water often must be spilled, increasing the likelihood of dissolved gases.

By early May, dissolved gas in the system had increased, prompting the water budget managers to monitor the types of spills at all Columbia River projects. To control the presence of dissolved gas, spills were often transferred from mainstem Columbia River to tributary projects. The managers also requested that the timing of spills and hatchery releases of fish be coordinated to "avert any significant dissolved gas problem which might otherwise have occurred," the report states. The meticulous attention paid to controlling the problem produced "gratifying" results, Karr said. No "significant" dissolved gas bubble disease was noted in migrating adult and juvenile fish, he said.

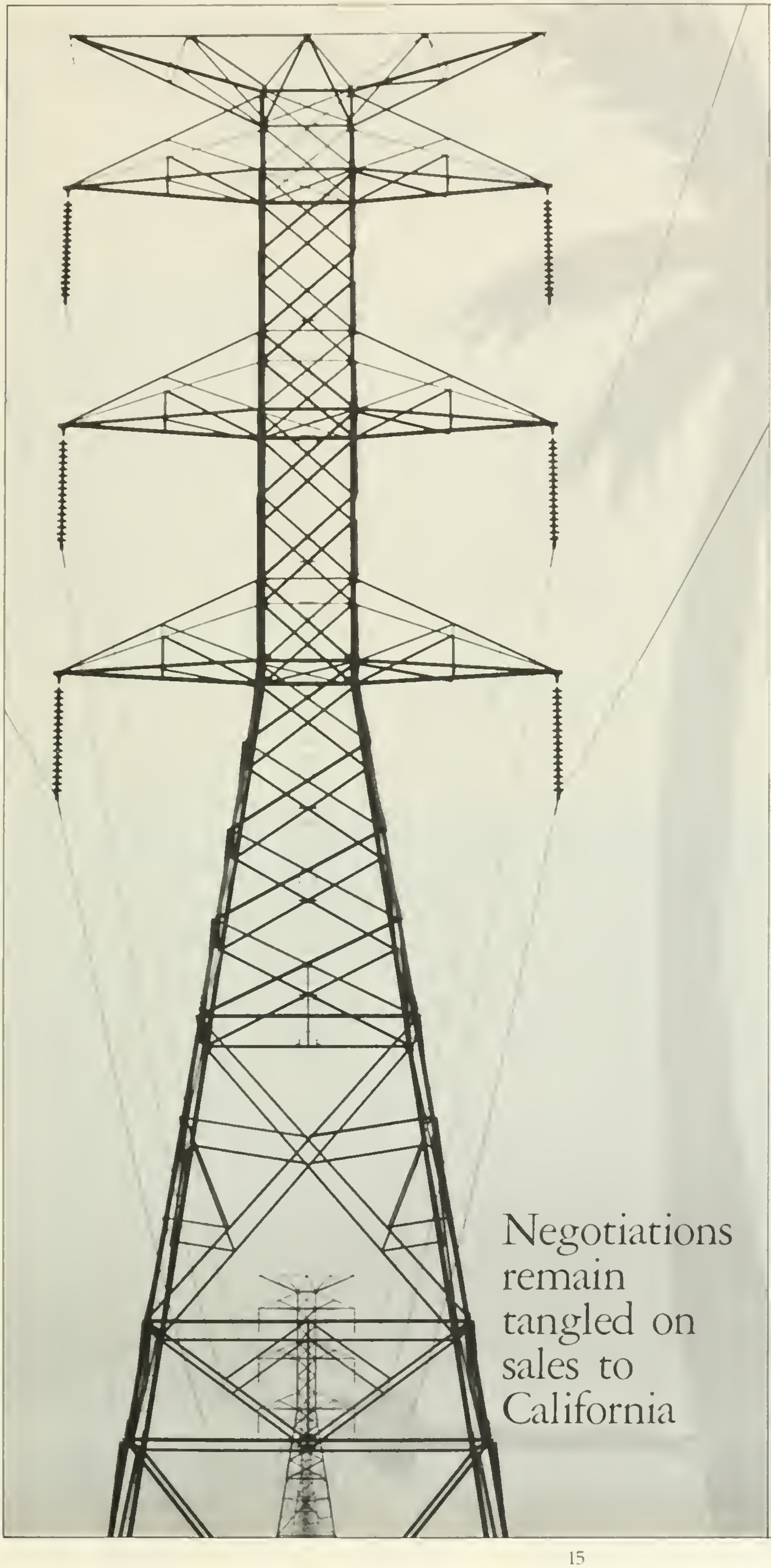
Major problems must be resolved for the water budget to be fully implemented in future water years. Perhaps most critical is the uncertainty over the amount of water that will be provided for the water budget from Dworshak Reservoir, operated by the Corps of Engineers, and from Brownlee Reservoir, operated by the Idaho Power Company.

Storage releases from these Idaho-based reservoirs is especially critical in low-water years to provide adequate flows for migrating fish. A low-water year would be characterized by the the low spring flows that were observed in 1973 and 1977. Maher and Karr say they and the project operators are working to resolve the problem.

Better methods to monitor migrating smolts are needed, and the water budget managers have developed a smolt monitoring program for FY84 BPA funding. A team of bio-statisticians has been assembled with representation from Indian tribes, fish and wildlife and federal power agencies, and utilities to develop an acceptable and statistically valid method of monitoring and counting smolts.

More experience also is needed to balance the needs of fish with the requirements of the hydroelectric system in low-water years. But the water budget managers are encouraged that great strides were made in managing the hydroelectric system for different uses, helping them to resolve future conflicts.

"If we have continued cooperation and coordination, then we can look forward to a steady increase in salmon returning in future years," Karr said.



Negotiations remain tangled on sales to California

by
Susan Skog

Detailed discussions about firm surplus power sales between the Northwest and the Southwest, principally California, have been simmering for months. These discussions recently gained momentum in early December when the California Energy Commission responded to several conceptual approaches for a long-term sale. The approaches were advanced by an informal working coalition of representatives from Northwest utilities and the Bonneville Power Administration.

Several months ago, the Northwest came to the bargaining table armed with two specific approaches which could lead to the transfer to the Southwest of 1500 average megawatts of firm surplus power for a period of 15 years, beginning in July 1984. Current thinking is that the sale would be a systemwide transaction, based on a mix of firm surplus from generating resources owned by both Northwest utilities and BPA.

Randy Hardy, executive director of the Pacific Northwest Utilities Conference Committee (PNUCC), said the two alternatives were advanced to the Southwest to move discussions off dead center. "It's fish-or-cut-bait time," Hardy said. "We've offered them (California utilities) two fairly clear choices based on what they've been telling us they need." The Northwest has essentially told the Southwest "it's time for you to indicate if you're serious," about securing a sale for firm power from the Northwest, Hardy said.

In a December 9 letter from the California Energy Commission, Commission Chairman Charles Imbrecht and California Public Utilities Commissioner William Bagley responded that the Northwest's conception of the sale falls short of meeting the needs of California utilities. However, they urged the Northwest to intensify future discussions to clarify the nature and duration of the sale, signaling to the Northwest that the door for more formal negotiations may be open early next year.

The California response outlined eight outstanding issues that stand in the way of accepting the framework for a firm power sale as drawn up by the Northwest. The price of the power, whether it will be guaranteed for at least a 15-year period, and the future availability of non-firm energy were cited as issues that will need further study.

Hardy, who said he was "mildly encouraged" by the December 9 letter, pre-

Kristin Finnegan photo

It's insane to send the power south for the benefit of California industries when it could be used to displace oil and gas-fired use in the Northwest for 50 percent power savings, Collins said.

dicted that the Northwest would respond to it after January.

The Northwest has sold energy in the Southeast since the early 1960s, but most of the energy has been non-firm surplus power, available during the spring run-off periods on an interruptible basis. Now the Northwest is projected to have additional surplus power from the completion of new thermal resources — such as the WPPSS 2 plant and Colstrip 3 — and is anxious to secure a firm sale, warranting a higher price for the non-interruptible power. (See *Northwest Energy News*, July/August, 1983.)

The first of the two ideas advanced by the Northwest would provide for the sale of 1500 megawatts at a fixed price for a five-year period with a "rolling" five-year commitment every year after up to 15 years. The proposed price for the electricity is 4.5 to 5.0 cents per kilowatt hour in the first year and 6.0 to 6.5 cents by the fifth year.

The price of the power under this proposal is expected to remain constant until the latter part of the 15-year contract, when it is expected to climb to 7.5 to 8.0 cents as the Northwest begins to develop more expensive new energy resources.

The first alternative would include a five-year pull-back provision under which Northwest utilities would be able to withdraw from the contract on five years' notice if their own loads grow faster than predicted or they are unable to deliver the promised energy.

The second alternative, which most interests Northwest privately-owned utilities, would guarantee the sale of firm power for 15 years at a fixed price of 6.0 cents per kilowatt hour for the first ten years, with the price escalating in the last five years, again depending on the type of new resources developed. The second proposal contains no call-back provision and is based on the idea that the Northwest's firm power should command a higher price because of the risks in committing to a long-term sale.

California Energy Commission advisor Gary Simon says the concepts proposed by the Northwest are "not entirely satisfactory" but show enough flexibility that an arrangement could possibly be worked out. While Simon stopped short of predicting if a deal could be struck, he added that he is "still cautiously optimistic the two sides could move to ground where both are comfortable."

Northwest utilities are less optimistic that a contract will be finalized with the Southwest in the immediate future. There are "two dozen major stumbling blocks" which could kill the chances of a deal, Hardy said. "Even under the best of circumstances, there's a one-in-ten chance of consummating a deal." But he said the benefits from such a sale could be so substantial that it's well worth pursuing.

Part of the Northwest's pessimism stems from California's reluctance to enter into any contract for firm power at a higher price, if it jeopardizes its long-standing ability to purchase non-firm power at bargain-basement prices.

California has jumped at the chance of idling some of its oil and gas-fired capacity, which cost as much as 6.0 cents per kilowatt hour to operate, when Northwest non-firm surplus power was available at 0.5 cents. (In BPA's new 1984 rate schedule the non-firm rate went to 0.9 cents.) California purchased about 2,800 megawatts from the Northwest in 1982.

The Northwest's negotiating position will only become credible when it takes the necessary steps to use the non-firm power within the region, blocking off the Southwest's access to the inexpensive power, according to Charles Collins, Washington state Power Council member. As a respresentative of the Council, he has attended recent meetings between Northwest and Southwest utilities. "It's insane to send the power south for the benefit of California industries when it could be used to displace oil and gas-fired use in the Northwest for 50 percent power savings," Collins said.

Until the Northwest uses its non-firm power within the region, it's doubtful that an "advantageous" contract between the two regions will be struck, Collins said, because the negotiations will continue to get hung up on factors such as the price of the power. "We have a fundamentally flawed market situation. We can't deal with price until we deal with supply," he added.

Only when the Southwest is unable to covet the Northwest's non-firm power will it begin to compare the price of its firm power with the Northwest's, Collins said.

The Northwest's pessimism about securing a long-term arrangement with California was underscored by a recent power sales deal negotiated between British Columbia Hydro and the Los Angeles Department of Power and Water and the cities of Burbank, Glendale, and Pasadena. Up to 400 megawatts will be sold by the Canadians for the next three years for 2.0 to 2.2 cents/kilowatt hour, markedly undercutting the Northwest's desired price.

The California/B.C. hydro arrangement only reinforces that there are many available markets from which California can pick and choose to meet its needs on a short-term basis. And it may continue to rely upon short-term purchases of power and forego a long-term arrangement with the Northwest because "a bird in the hand is always worth two in the bush," Hardy said.

Simon of the California Energy Commission asserts that attractive short-term purchases of surplus power are always desirable under certain conditions, but the Southwest would rather have the assurance of a long-term, firm sale. "We're willing in California to pay a higher price for a long-term contract," he said.

He cautioned, however, that the Southwest is unwilling to pay too high a price for that security. "It's been made clear that if the Northwest wants to build new thermal plants to support a sale out of the region . . . the price would be too high to be attractive," Simon said.

To keep the price of power low enough to entice the Southwest, Northwest utilities must take risks and be innovative in executing the Council's energy plan, Simon said. The Northwest though, would like to come close to recovering its costs from the development of new thermal resources scheduled to come on-line in 1984.

Colstrip 3, a coal-fired plant in Montana scheduled to come on-line in 1984, is expected to cost at least 6.0 cents per kilowatt hour. The plant's owners include Montana Power Co., Puget Sound Power and Light Co., Portland General Electric, and Washington Water Power.

"The Northwest has offered us 1500 megawatts. We could use all of that . . . if the price were right," Simon said. California has a capacity of 42,000 megawatts and projects it will need 13,000 additional megawatts by 1990.

Still another major obstacle to a smooth

If the Richter scale were used as a barometer to register the success of recent discussions it would only register a 2.0, Schultz said.

resolution of the power transfer is the inadequacy of current transmission capacity between the two regions. The Northwest is operating under the assumption that the transmission capability must be increased to handle at least the 1500 megawatts proposed in the sale.

"Transmission constraints present one of the greatest hurdles to increased interregional transfers," concludes Wheaton. "It appears that the present transmission capacity cannot support a large firm surplus sale without displacing some other sale."

The transmission question is one that a committee of Northwest utilities has been wrestling with for months, according to Merrill Schultz, director of the Intercompany Pool, a private utility organization. The committee has been studying a range of possibilities and has whittled down the current alternative to nine different scenarios.

Two inland proposals would emanate out of Garrison, Montana. One line would be built through southeastern Idaho and go directly to Los Angeles. The other proposal involves running a line through south central Idaho to San Francisco.

Under another inland scenario, a line would be built beginning at the Dworshak Dam in northern Idaho, near Lewiston, and continue through the Hells Canyon area on the Idaho-Oregon border and on to the San Francisco area.

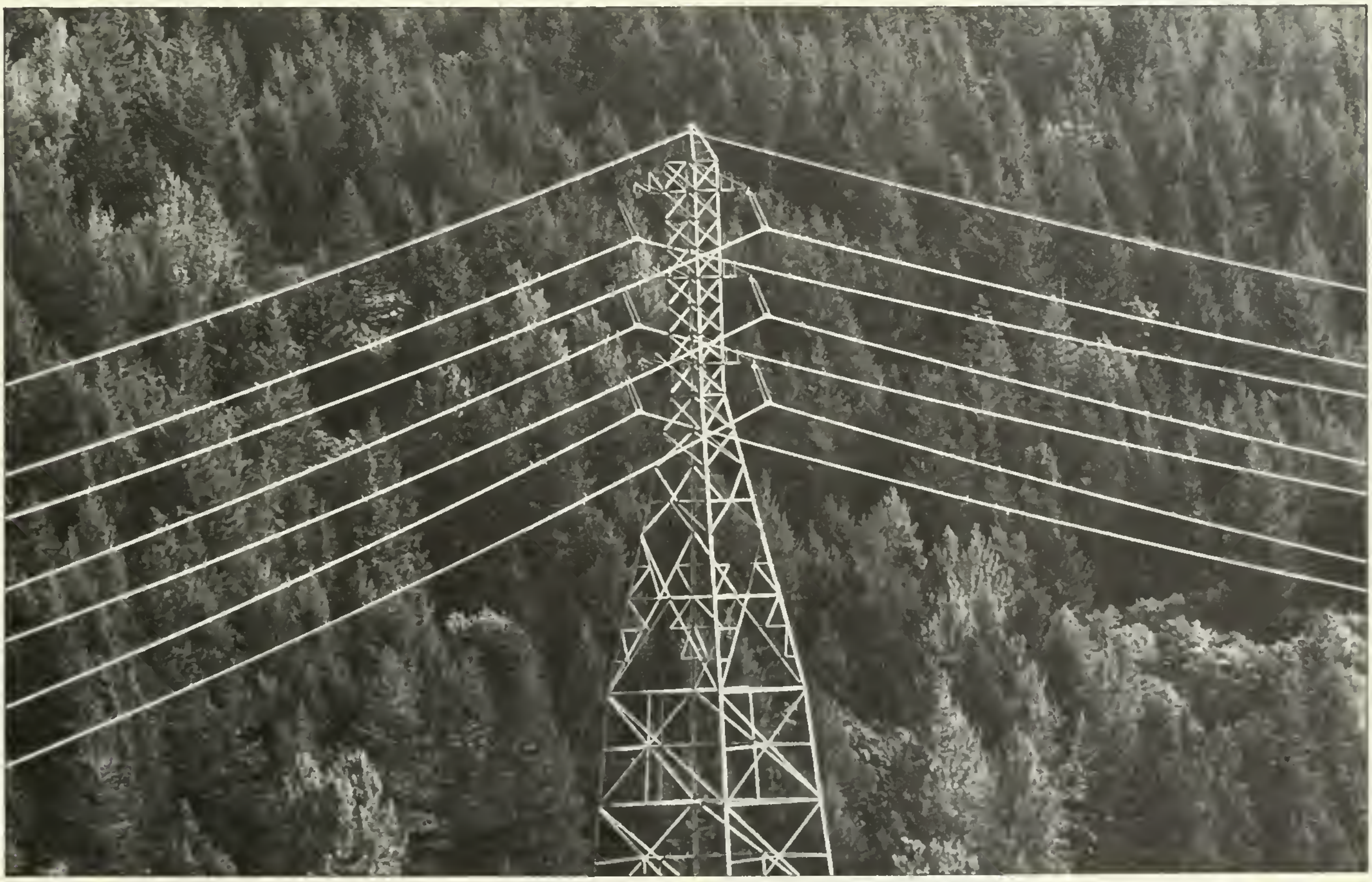
Two "coastal" alternatives are also being explored. One would parallel the existing direct-current transmission line which now runs from northern Oregon to southern California. The other alternative would parallel the existing alternating current lines, which run from the John Day Dam in northern Oregon to southern California. The other alternatives fall within the basic framework of these scenarios.

Northwest utilities are searching for a transmission alternative that "does the most work for the fewest dollars," Schultz said. California utilities have given no indication which alternative they would prefer.

Meanwhile, Schultz remains pessimistic about prospects for finalizing a sale with California in the near future. If the Richter scale were used as a barometer to register the success of recent discussions it would only register a 2.0, Schultz said.

Beyond the usual difficulties with negotiating such a complex transaction, there is the added difficulty of coordinating the participation of all affected and interested parties in both regions.

There are approximately 40 players in the Northwest and an equal number in the Southwest, according to the California Energy Commission's Simon. "Each individual holds a vote . . . and anyone could block it."



Aperture photo

Until the final hour, Bonneville held out hope that enough utilities, especially the private utilities, would enter into the agreement.

After months of in-house analysis and negotiations with the Bonneville Power Administration, the Northwest's largest utilities rejected a conservation contract offered by the federal agency in July to 130 eligible utilities. When the October 31 deadline arrived, the region's private utilities, the cities of Seattle and Tacoma, and most of the public utilities that generate a significant amount of their own power, turned their backs on the 20-year contract.

After the final tally, 101 utilities, representing 40 percent of the region's electric heat customers, signed the contract. This allows them to receive BPA financial assistance for home weatherization and street lighting programs. About $150 million has been budgeted by BPA for these two programs over the next two years. The agency has also budgeted about $200 million for demonstration and pilot programs that it intends to develop in the commercial, industrial and agriculture sectors over the next two years.

Until the final hour, Bonneville held out hope that enough utilities, especially the private utilities, would enter into the agreement. BPA expressed serious disappointment that the majority of the region's utilities decided to "go it alone" with their own conservation programs.

"The simple truth is that their (utilities') decision not to sign will significantly increase the difficulty of carrying out a coordinated regional conservation," BPA administrator Peter Johnson said in a prepared statement.

The region's private utilities largely balked at signing the BPA contract because they alleged the cost of the agreement far outweighed any benefits their ratepayers would receive. At issue was a conservation contract charge requiring the utilities which generate their own power to pay for their participation in BPA-sponsored conservation programs.

The utilities argued that the contract charges were burdensome and would cost them more than pursuing conservation independently of BPA.

Puget Sound Power and Light Conservation Director Gary Swafford said the contract charge dampened the utility's enthusiasm for the contract. Puget Power estimated it would have paid about $37 million and received about $20 million in benefits over the next 20 years for current BPA programs, Swafford said.

Likewise, Pacific Power and Light estimated it would have cost the utility an additional $7 million over the next two years without any assurance of future benefits after 1985 to offset the up-front charge. Jim Pienovi, PP&L vice president of energy services, said the utility hasn't closed the door on further discussions with BPA on the contract. In fact, PP&L hopes the economic disadvantage of the contract can be eliminated so the utility could "be in a better position to look at signing the contract," Pienovi said.

Idaho Power Director of Conservation Management Cal Bowen estimated the Boise-based utility would have paid between $20 to $23 million to participate in the contract. Philosophically, Idaho Power also opposed bearing a heavy financial burden to help other areas of the Northwest catch up to its already aggressive conservation efforts, Bowen said.

From BPA's perspective, the contract charge wasn't the major stumbling block to acceptance of the conservation agreement. The absence of concrete conservation programs, such as pilot programs to carry out the Council's two-year action plan, may have caused utilities to shy away from the contract, according to Gene Ferguson, BPA conservation implementation manager.

Major utilities say no to BPA contracts . . . for now

by Susan Skog

BPA charged that the utilities' claim that there weren't enough benefits to persuade them to sign the contract is just a smokescreen.

The non-signers said they "didn't have enough assured benefits to compensate for the contract charge," Ferguson said. The charge then looked "inflated" to the utilities because they could only examine the economic benefits from BPA's existing weatherization and street lighting activities. Unfortunately, the utilities were only able to do a "very narrow, short-term economic analysis," Ferguson said. Most of the region's private utilities have already established an impressive track record in residential conservation.

Steve Hickok, BPA assistant administrator and conservation manager, charged that the utilities' claim that there weren't enough benefits to persuade them to sign the contract is just a smokescreen. When all the smoke is blown away, utilities face two clear impediments to signing the contract, he said.

First, the private utilities don't want additional conservation in the immediate future because they don't want to see their loads reduced. Second, the utilities didn't want to bear the costs of the Council's two-year action plan, which they view as expensive, Hickok said.

The private utilities didn't oppose the philosophy of sharing conservation costs through a charge, but are too financially strapped now from other obligations to invest in additional conservation, Hickok added.

The utilities can't look at the long-term benefits of conservation investments until more pressing short-term problems are dealt with, he said.

Puget Power, Portland General Electric Co., Pacific Power and Light and Washington Water Power have collectively invested nearly $400 million in the now-defunct Skagit-Hanford nuclear plant, which was to have been built in Washington. PGE and PP&L have also invested millions of dollars in the Pebble Springs nuclear plant, which was also shelved. Finally, PGE, PP&L, Puget Power and Washington Water Power Co. have collectively invested more than $700 million in the stalled WPPSS three nuclear plant.

The utilities have asked their respective utility commissions to recoup their investments in Skagit-Hanford and Pebble Springs by melding them into their rate base, based on the premise that they were prudent utility investments. Some of the utility requests have been granted, but the majority of the sunk costs may be absorbed by the utility's stockholders.

The utility's plans for new thermal generation went awry, so they are understandably cautious about investing in conservation at this time, Hickok said.

Though he feels their concerns are "short sighted," he admits that if he were in the utilities' shoes, he might be sufficiently frightened about the current financial malaise and make the same decision about the conservation contract, Hickok said.

"As disappointed as I was, I recognize that this is the environment we have to deal with," and BPA is looking for ways in which the private utilities can participate in the regional plan without jeopardizing their financial positions further, he said.

Thus, BPA is now grappling with the limited reach of its conservation efforts in light of the strong regional effort called for in the Northwest Power Act and reflected in the Council's plan.

The refusal of the utilities to enter into the agreement "limits the magnitude of our programs and our flexibility in developing future conservation programs," Ferguson said. "We still need to tap into the IOUs (investor-owned utilities) to share experiences with them and learn from their activities."

Hickok said BPA has many options to involve the private utilities in implementation of the Council's two-year action plan, which the agency intends to outline to the Council. One idea is to pursue some conservation programs in tandem with the utilities, which would share in the cost of the program. If utilities are considering a program which would help BPA carry out regional energy conservation efforts, then BPA might try to "link up with them," Hickok said.

At the same time, BPA will be cautious about sticking by those who signed the conservation contract "and not give the store away" to the non-signers, he added.

The agency will also try to find a more "acceptable" way to recover conservation costs for possible inclusion in the next rate request, which would be filed in the summer of 1984, he said.

In the meantime, the agency is looking into the future and intends to offer the conservation contract again next summer, Hickok said. Before fiscal year 1985 programs are started, the agency would "open the door to see if anyone else wanted to come in," he said.

CALENDAR

January 21, 22 — Energy Expo sponsored by Communities United for Responsible Energy Use, Lewis County Fairgrounds in Centralia, Washington.

January 27 — BPA, billing credits policy — cost-effectiveness determination/ close of comments.

January 31 — PNUCC load forecasting committee meeting, Portland.

January 31 — BPA, request for commercial sector financial field tests/proposals due by 5 p.m.

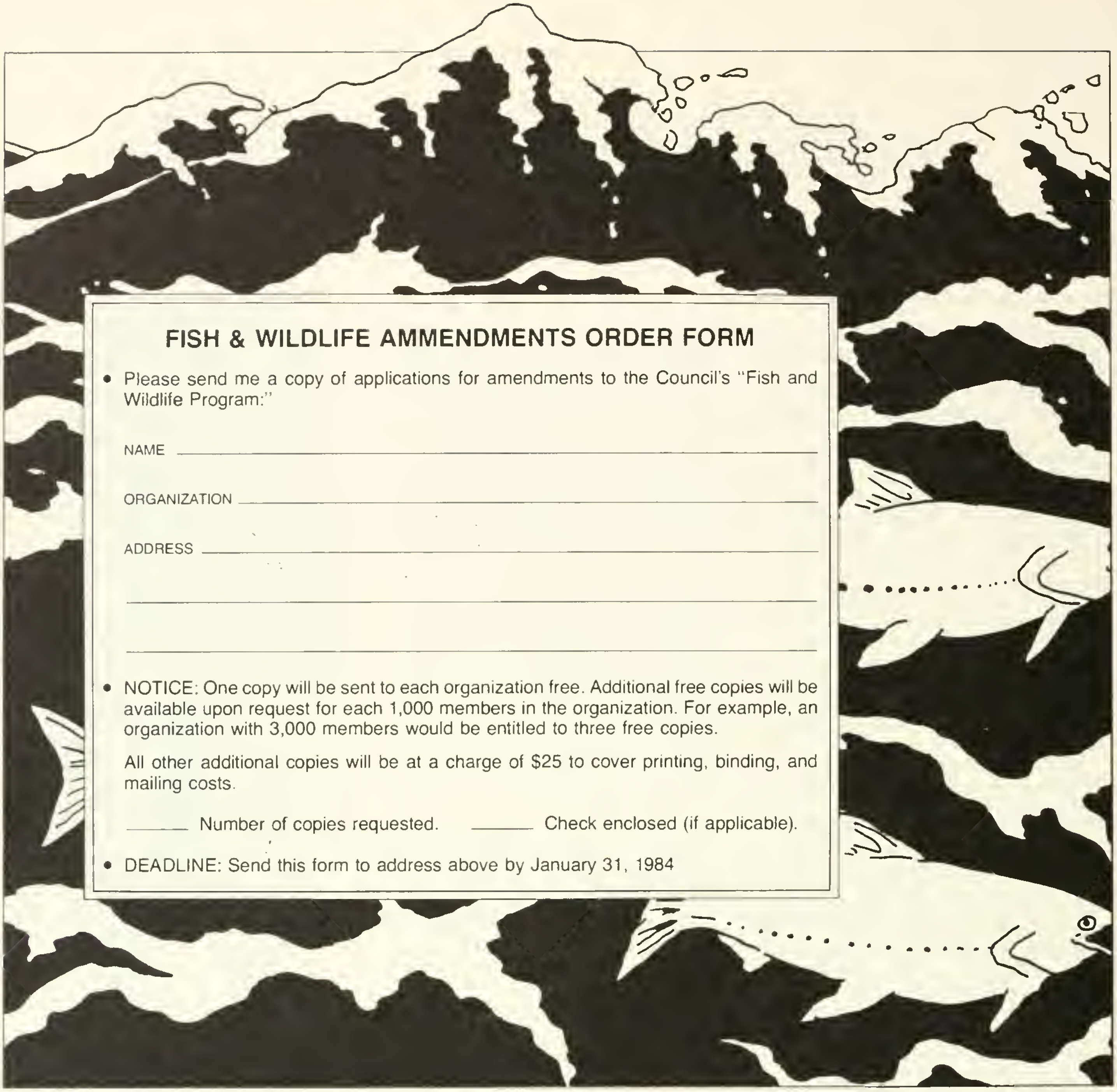
February 1, 2 — Northwest Power Planning Council meeting in Coeur d'Alene, Idaho.

February 15 — BPA, revised proposed impact aid policy/close of comment period.

February 22, 23 — Northwest Power Planning Council meeting in Missoula, Montana.

March 14, 15 — Northwest Power Planning Council meeting in Eugene, Oregon.

April 4, 5 — Northwest Power Planning Council meeting in Boise, Idaho.



FISH & WILDLIFE AMMENDMENTS ORDER FORM

- Please send me a copy of applications for amendments to the Council's "Fish and Wildlife Program:"

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- NOTICE: One copy will be sent to each organization free. Additional free copies will be available upon request for each 1,000 members in the organization. For example, an organization with 3,000 members would be entitled to three free copies.

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NORTHWEST
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The Northwest Power Planning Council is required to develop a program to restore the Columbia fisheries and a regional electric energy plan, to be carried out by the Bonneville Power Administration, emphasizing cost-effective conservation and renewable resources

Editor: Dulcy Mahar
Graphic Design: Linda Sawaya

Editor's Notes

This is a special issue with several stories devoted to one subject — the Model Conservation Standards. These should provide basic information on the standards. Over the next two years we will update the story with new developments as homebuilders, homeowners, and officials gain new expertise with super energy efficient building.

While building homes right the first time may be the Council's first priority, we also recognize the importance of making existing houses more energy efficient. In the last issue we introduced the nation's largest conservation project at Hood River.

In this issue, Carlotta Collette revisits Hood River to do a story on the sophisticated technology used to monitor the project. Incidentally, Collette has just joined the Council's public affairs staff as full-time writer-photographer.

About our writers: When we feature the work of a guest writer, a short biographical line will appear at the end of that story. All stories without the biographical line are the work of the Council's central and state public affairs staff. Unsigned articles are the responsibility of the editor.

Cover illustration by Georgiana Nēhl

NOW SHOWING

Several films and slideshows are available to groups who would like to learn more about the Northwest Power Planning Council and its programs. To borrow the shows, contact Chris Larson or Carol McAllister at the Council's central office (Oregon, 1-800-452-2324; Washington, Idaho and Montana, 1-800-222-3355 or 1-503-222-5161).

Energy 2000
This recently updated film introduces the viewer to the Northwest Power Planning Council and describes the 20-year Northwest Conservation and Electric Power Plan. (12 minutes)

Model Conservation Standards Slide Show
This slide show explains what the standards are, how they were developed, and why they are important to the region. (12 minutes)

The Journey of the Kings
The plight of the salmon and how their survival has been adversely affected by the dams in the Columbia River basin is the subject of this film, which will be released in April. It describes the work the Northwest Power Planning Council is doing to restore the salmon runs and protect fish and wildlife resources. (30 minutes)

—RC

CALENDAR

March 14, 15 — Northwest Power Planning Council meeting at the ERB Memorial Union Building on the University of Oregon campus, Eugene, Oregon.

April 4, 5 — Northwest Power Planning Council meeting at the Red Lion Inn, Boise, Idaho.

April 25, 26 — Northwest Power Planning Council meeting in Tacoma, Washington.

May 15 — Northwest Public Power Association Engineering and Operations Conference in Portland, Oregon.

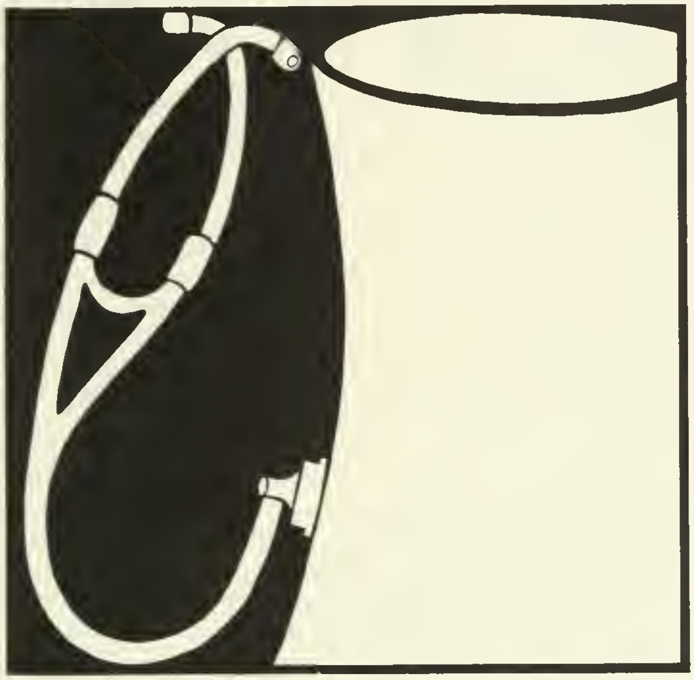
May 16, 17 — Northwest Power Planning Council meeting in Helena, Montana.

May 31, June 1 — Northwest Public Power Association annual meeting in Victoria, British Columbia.

June 11-13 — American Water Resources Association symposium on "A Critical Assessment of Forecasting in Western Water Resources Management." Sheraton Hotel, Seattle, Washington. Contact Gary Minton, (206) 282-1681.

Compiled by Ruth Curtis

IN THE NEWS



Nuclear sees one spot of good news

Diagnosing the health of the nation's nuclear power industry seems to be the favorite sport of editors and columnists this year. And, it turns out, the Northwest's infamous WPPSS default is but one of several landmark — and shattering — events for the industry in recent months.

For example, this January brought the one-hundredth cancellation in the last ten years of a nuclear reactor. Actually two reactors were cancelled at Marble Head, Indiana. One reactor was 59 percent complete; the other was 37 percent complete. Together, the twin reactors had already cost $2.5 billion.

In Zimmer, Ohio, a 97 percent-completed plant will be converted to coal. Probably the most stunning setback occurred in Byron, Illinois, where a $3.35 billion completed plant was denied a license by the Nuclear Regulatory Commission. The Commission cited "quality control failures."

The *New York Times* reports that no nuclear plant has been ordered since 1978 and says that of 60 plants under construction, three-fourths are more than half finished. The U.S. Energy Department's Energy Information Administration adds more bad news.

It has just issued a report showing that final construction costs for three-fourths of the nation's reactors ran at least double their pre-construction estimates and 28 percent came in at four times their estimated cost. Blamed were inflation, interest rates, construction costs, and delays.

The problems plaguing the industry include safety concerns, financial risks, high capital costs, operating problems, management failures, lowered demand for electricity, and public apprehension over nuclear power.

So serious is the latter point that a government report says that twice as many people oppose nuclear plants as favor them. So concerned is the nuclear industry that it is planning a $40 million advertising campaign to bolster public confidence in nuclear power, according to the *Wall Street Journal*.

On top of all this bad news comes a rare bit of positive news. A report issued this February by the U.S. Office of Technology Assessment says that the problems are not inherent to nuclear power. The report, requested by the House Committee on Science and Technology, blamed immature technology and even more immature management for most of the problems.

Overall, the 293-page report concludes further nuclear expansion is unlikely in this century unless major improvements are made in those two areas.

According to the report, positive issues weighing in favor of the nuclear option include the long-term environmental effects of coal and the current underdeveloped state of alternate energy sources such as solar and wind power. The report also took note of the fact that many retroactive changes made in existing reactors have resolved technological problems, giving hope that the technology of new plants would be more "mature."

Views mixed on proposal for exchange rates

Reaction to a proposed change in energy exchange rates has ranged from cheers to jeers. The cheers come from the Direct Service Industries (DSIs), principally aluminum plants. They support the Bonneville Power Administration's proposal to change the method it uses for determining costs in its Residential Exchange Program.

On the other side are the private utilities who claim the proposed change could up their rates to residential and farm customers by as much as 26 percent. Still another reaction comes from members of the Northwest Power Planning Council.

Before addressing the merits of the proposed change, several Council members expressed concern when Bonneville published the proposed changes without consulting the Council as required by the Northwest Power Act. The Council was left with no time to analyze the proposal prior to its publication.

The Residential Exchange Program was stipulated by the Northwest Power Act to provide rate relief to residential and small farm customers of investor-owned utilities. Under the system, private utilities sell power to BPA at their "average system cost" of resources.

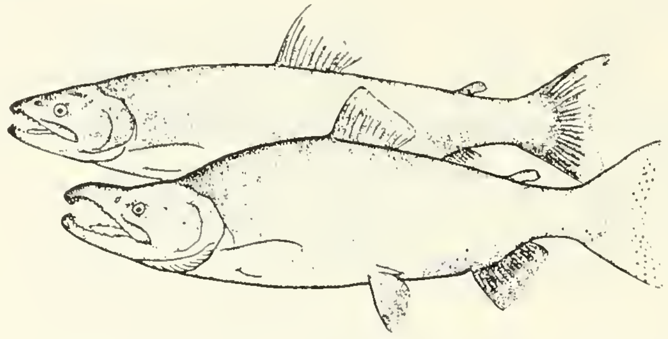
In exchange, BPA sells the utility the same amount of power back at its lower public utility "preference" rate. The savings are passed on to the utilities' customers.

The program was designed to allow all Northwest residential and small farm customers to share in the region's low cost energy. BPA recovers the cost of this benefit through rates it charges its direct service customers. The DSIs say their share of the exchange rate is too high.

Bonneville's proposal focuses on the "average system cost methodology," the computation it uses to determine the exchange rates. The agency would like to eliminate certain costs from its calculation when it decides how much it will pay for the utilities' power.

Thus far, customers of the 24 participating utilities have received $367 million in rate relief from the program, according to Bonneville.

Idaho may get new hatchery



Construction of a kokanee hatchery on the Clark Fork River in north Idaho, which could lead to restoration of kokanee stocks in Lake Pend Oreille, was approved by the Northwest Power Planning Council earlier this year. The Clark Fork River is a tributary of Lake Pend Oreille, near Sandpoint.

The Council's action paves the way for completion of a three-party agreement for funding the hatchery between the Bonneville Power Administration, Washington Water Power Company, and the Idaho Department of Fish and Game. Total design and construction of the Clark Fork hatchery is expected to cost between $1.5-1.6 million.

"The spirit of cooperation exhibited by the Idaho Department of Fish and Game, the Washington Water Power Company and the Bonneville Power Administration has been tremendous," according to Idaho Council member Larry Mills. "All these parties have spent several months working out the details for funding the Pend Oreille hatchery, which carries out one of the vital resident fish measures in the Council's Fish and Wildlife Program."

Consummation of a cost-sharing agreement between the three parties for the final design, construction, operation and maintenance of the hatchery also will result in substantial savings for BPA ratepayers, according to Mills. BPA, WWP, and Idaho Fish and Game are currently working out the details of the agreement.

The final design work and necessary environmental statements will be completed later this year to allow for a two-year construction period. Idaho Fish and Game hopes to begin operating the hatchery by October 1986.

The most recent harvest studies of the lake indicate that the fishery harvests have declined from about 1 million to less than 200,000 in 1979. The Clark Fork hatchery would produce around 20 million advanced kokanee fry, which is expected to result in an annual harvest of around 750,000 fish.

Decline of the kokanee fishery at Lake Pend Oreille has been attributed to a series of hydropower and nonhydropower problems.—SS

Alumax snubs extension

Fourteen years of planning ended quietly February 21, when Alumax Inc. failed to meet Bonneville Power's deadline for a long-term power agreement. Alumax had asked BPA for two more years in which to decide whether it could afford to pay Northwest electric rates for its proposed Umatilla, Oregon plant.

Bonneville considered an extension only three months shy of Alumax's requested one. But, after public comment swung against the aluminum smelter, BPA cut its extension to just 21 days. "The firm [Alumax] has been considering its option for many years," said BPA Administrator Peter Johnson. "After careful review of the public comments . . . we find it is in the best interest of the region and its ratepayers to obtain a decision now."

The proposed Alumax smelter would have required 320 average megawatts of power, a load that, during a surplus period, would not have staggered the power distribution system. Unfortunately, the plant would have come on line in the late 1980s, when the region's current surplus could be depleted. To guarantee 320 megawatts to Alumax, BPA would likely have had to develop new resources for that power. Revenues from Alumax were not expected to cover the full cost of building the new resources, so the added expense would have been passed on to other ratepayers.

Complicating the issue even more was the Northwest Power Planning Council's decision to exclude the Alumax load from its 20-year plan. "The Council believed there was a low probability of Alumax building a plant in the region," wrote Council Chairman Keith Colbo in his comments to BPA. "Therefore, it was not prudent to plan for additional generating and conservation resources to meet such an uncertain load."—CC

Cheaper power may up yields for irrigators

Northwest agricultural experts will be watching to see if the ability to buy cheaper power for irrigation will increase yields. A pilot program to make nonfirm energy available for irrigation during March and April has been offered by the Bonneville Power Administration.

During this season irrigation is used to fumigate and fertilize the soil prior to planting. The low-cost sale could be a shot in the arm for the region's irrigated agriculture which is currently suffering from depressed markets and increased operating costs.

The nonfirm energy will be made available to Bonneville's nongenerating preference customers including cooperatives, public utility districts, and municipalities at a rate of 1.39 cents per kilowatt hour, less than half the normal rate.

The Northwest Power Plan promotes the sale of nonfirm, interruptible power within the region and cites irrigators as one of the groups which could benefit substantially from such a sale. The Plan concludes that such sales during periods of surplus can aid the regional economy and reduce rates for all consumers.

During the pilot project, Bonneville will study price elasticity, load shifting, impact of the sale on crop selection, and consumer acceptance. The data collected will be used to design future longer-term programs to assist irrigated agriculture.

To prevent revenue losses, participating utilities will be required to structure their retail prices to encourage sales above what would be expected if the project were not in place. In recent years, spring retail irrigation sales have declined.

Billing credits questioned

Bonneville Power Administration's billing credits policy should be consistent with the Northwest power plan according to the Northwest Power Planning Council.

The Council has told BPA to amend its policy to require that resources funded through billing credits meet the test of cost effectiveness. The power plan requires that resources be acquired in order of their cost effectiveness and does not differentiate between billing credit resources and other resource acquisitions. However, Bonneville had not adopted its billing credit policy at the time the plan was completed.

A billing credit is designed to give utilities an incentive for innovation in developing conservation or generating resources of their own. It is an alternative to BPA's acquisition of a resource. The Northwest Power Act allows the agency to grant credits to its customers for their own conservation and resource acquisitions if they reduce BPA's obligation to acquire additional resources.

The utility receives credit from BPA in the form of a reduction on its rates. The credit is compensation for BPA's reduced obligation to supply a comparable resource.

Since billing credit resources displace planned BPA acquisitions, they could change the make-up of the region's resource portfolio if they do not meet the same cost-effective test as other BPA acquisitions.

The Council sent BPA written notice saying the power act does not permit billing credits for generating resources which are inconsistent with the plan. The Council also noted that the plan considers cost effectiveness from a regional viewpoint and not from a single utility or BPA viewpoint.

Chinese visit to window shop

It turned out to be nothing more than a flirtation — at least for now.

A Chinese delegation raised some WPPSS bondholders' hopes when it visited one of the terminated plants in Washington. The Chinese, who are stepping up their efforts to improve their nuclear technology, were there to explore the possibility of buying some of the nuclear plant equipment and technology. There are also reports that the Chinese have contacted the Tennessee Valley Authority about a similar purchase from four other terminated plants.

For now, though, the sale is not to be. First, the Chinese must sign a nuclear nonproliferation agreement. Such an agreement would guarantee "no nuclear material will be reprocessed, enriched or otherwise altered" without prior approval of the United States.

U.S. Representative Don Bonker, who has been in contact with Chinese Premier Zhao Ziyang, reports such an agreement is possible when President Reagan visits China this year.

Meanwhile, WPPSS officials see such a sale as a minor step in solving their financial problems.

BPA works for rate increase

The Bonneville Power Administration is busy trying to revamp its accounting system. At risk is permission for a permanent rate increase, without which the agency says it stands to lose $2 million a month.

The Federal Energy Regulatory Commission (FERC) is allowing Bonneville a temporary rate increase from February through May to give the agency time to comply with a FERC order that the agency account separately for its federal and nonfederal revenues and deficits.

Earlier, FERC had rejected Bonneville's request for a 17 percent rate increase in an unusually angry session during which one FERC commissioner called Bonneville a "renegade" agency.

The issue revolves around whether revenues raised by rates charged for transmitting power are being used to subsidize other operations or not. Past budgeting processes do not show this clearly, according to FERC. The Commission says it cannot meet the Northwest Power Act's requirements that transmission rates cover only costs of transmission without this information.

Washington bill affects Council

Two new Northwest Power Planning Council members, Kai Lee and Don Godard, have passed committee-level confirmation hearings in their respective states of Washington and Oregon. Both Charles Collins of Washington and Robert Saxvik of Idaho have been reappointed by their governors.

Meanwhile, a move in Washington may affect the make-up of the Washington representation. SB2837, a bill to require one of the Washington Council members to come from eastern Washington, has been amended in the House to exclude current Council members but had not received Senate concurrence at press time.

Amazing Grace report issued

It had 2,478 ideas for cutting costs, and one idea in particular raised eyebrows in the Pacific Northwest. That was the Grace Commission's proposal that the federal government get out of the business of owning and marketing hydroelectric power.

The President's Private Sector Survey on Cost Control, better known as the Grace report after commission chairman J. Peter Grace, was charged with uncovering ways government spending and waste could be eliminated.

The report claimed its recommendations could save $424.4 billion over three years. Of that, $25 billion would come from the sale of federally-owned hydroelectric dams and of all assets of the five regional power marketing administrations (PMAs) of which Bonneville Power Administration is one.

The report also proposed Bonneville and the four other PMAs charge "fair market rates" as opposed to the current wholesale rates for electricity. The report noted that the Northwest's rates are less than half the national average.

The Northwest's industries, public utilities, and news media generally took a dim view of the idea. Most predicted such an idea would double electric rates, and drive the aluminum industry out of the region.

The Northwest Power Planning Council took no official position. But speaking unofficially, one Council member summed up the feelings of several Northwest observers. Speaking to reporters, Oregon's Roy Hemmingway said, "The chance that Congress will enact legislation to turn over the PMAs to private enterprise is extremely small. I don't worry about things that don't have any chance of happening."

MODEL CONSERVATION STANDARDS

BUILD IT RIGHT THE FIRST TIME

It may appear strange to a lot of people that while the Northwest enjoys a major energy surplus, the region's main energy policy-making body is pushing energy conservation — and in a big way.

The Northwest Power Planning Council has made conservation the cornerstone of its regional power plan. Furthermore, it has made its Model Conservation Standards (MCS) for new buildings the cornerstone of its conservation effort.

The Model Conservation Standards are standards to make new, electrically-heated residential and commercial structures super energy efficient. The deadline for adopting these standards is January 1986. Why the rush during a period of surplus?

The key word is capability. "You don't wait until the record dry year or an economic boom that puts heavy demand on energy resources to flip a switch and turn on conservation programs," says Council Chairman Keith Colbo. "The capability to conserve has to be put into place first."

Another key word is temporary, and that refers to the nature of a surplus. Council Member Gerald Mueller explained the idea succinctly at a recent public meeting. "When you build a house, you get one shot to build it right," he told a panel of local government officials. "I'm told the average life span of a house is 54 years. Is the current surplus going to last that long? I don't think so. But that house is going to stand there and use electricity year after year after year."

Still another key term is "least-expensive." Conservation meets the criterion set by the 1980 Pacific Northwest Electric Power Planning and Conservation Act to use the least expensive resource first. Not only is conservation the region's least expensive energy resource, but the standards are among the least expensive and most effective conservation measures. Council staff analysts estimate the cost of building energy efficient features into a house from the start is about half the cost of retrofitting a comparable existing house. Not only that, making the house energy efficient in the first place saves far more energy.

While the Council's power plan emphasizes the importance of conservation in all sectors — industrial, agricultural, and governmental as well as residential and commercial — the latter two sectors by far hold the greatest savings potential. This is why the standards, which address the residential and commercial sectors, are critical.

Even without any other conservation efforts, Council energy analyst Tom Eckman estimates the model standards alone will save approximately 1,500 average megawatts of new electricity by the year 2002 under the Council's high growth projections for the region. "This represents about 14 percent of the new electricity that will be needed. Under the low growth projection with fewer houses being built, the model standards could save 265 average megawatts or about 36 percent of the needed new supply," Eckman reports.

To insure maximum savings, the standards take climate and geographic conditions into account. Separate standards are designated for each of the three climate zones (see figure 1). Zone 1 encompasses most of the mild marine climate west of the Cascades. Zone 2 is the more extreme climate east of the Cascades except for the higher elevations. Those elevations and most of western Montana are in zone 3.

These zones, developed by the U.S. Weather Service, are based on heating degree days — the average degrees per year it takes to bring the daily temperature to an "ideal interior temperature" of 65 degrees.

The standards do not specify how a new home or commercial building must be built. For homes, the standards simply set a ceiling, called an "energy budget," for space heating in each of the three zones. The builder may use a variety of options to meet those budgets including insulation, glazing, heat pumps, solar features, and control of air leakage. This method of setting standards allows homebuilders wide design flexibility.

While the MCS for residential buildings deal with energy budgets for space heating, the standards for commercial buildings deal with efficiency requirements for equipment used to heat, ventilate, air condition, and light the buildings.

The lighting standards for most commercial buildings are similar to codes already in place in Oregon and Washington. The only departure is for office buildings and for large retail buildings (over 20,000

CLIMATE ZONE

Building Type	1 4000-6000 HDD* (kWh/sq. ft./yr.)	2 6000-8000 HDD (kWh/sq. ft./yr.)	3 over 8000 HDD (kWh/sq. ft./yr.)
Single-family (R-3)	2.0	2.6	3.2
Multi-family (R-1)	1.2	2.3	2.8

HDD = Heating degree days at 65°F.

1

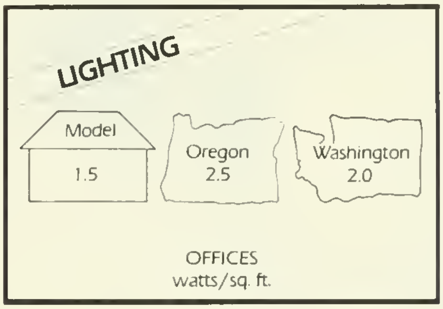
square feet). These more stringent lighting standards have been adopted in California. (See figure 2 for MCS compared to current Oregon-Washington codes in office buildings. Figure 3 compares the figures for large retail buildings.)

The residential standards haven't been without their share of controversy. Two law suits have been filed, one by a group of Northwest natural gas companies which questions the impact of the standards on the natural gas industry. The other suit was filed by the Seattle Master Homebuilders Association and challenges the cost effectiveness of the MCS. (See related story for how cost effectiveness was determined.)

Despite the controversy, the standards are similar and in many cases identical to energy conservation design guidelines developed by the National Association of Homebuilders (NAHB) for insulation, glazing, air infiltration, and solar orientation. (See figures 4-7.)

Some homebuilders have challenged the standards on the basis of their upfront cost. Certainly, installing energy-efficient features will increase the purchase price of a home. Eckman estimates the additional cost of building a home to meet the MCS will range from a low of $2,400 in zone 1 to a high of $4,500 in zone 3.

However, the regional power act specified that not only must the standards be cost effective for the region, but they also must be economically feasible — in short, affordable — for the consumer. The Council interpreted this to mean that a home built to the MCS must cost the homebuyer less to own and operate over its lifetime than one built to current standards. The



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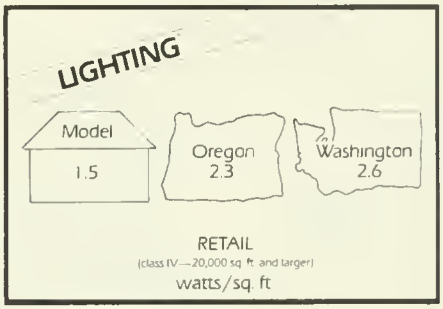
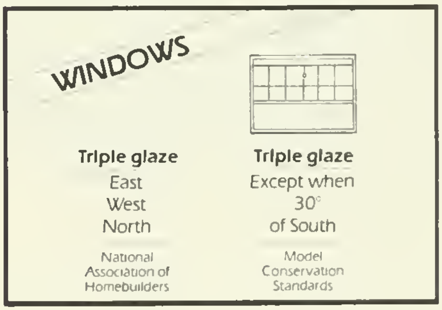


3

INSULATION

	R-values	
ceiling	30/38	30/38
walls	19/27	19/27
floors	19	19
perimeter	10	10
	National Association of Homebuilders	Model Conservation Standards

4



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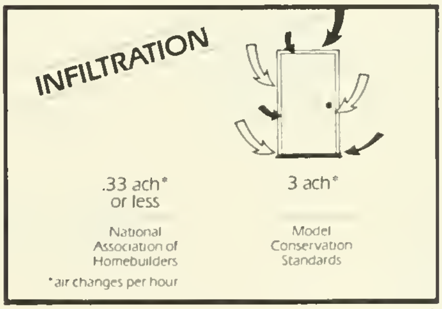
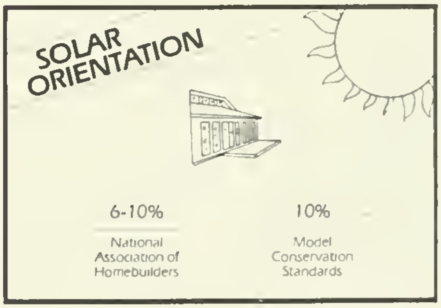
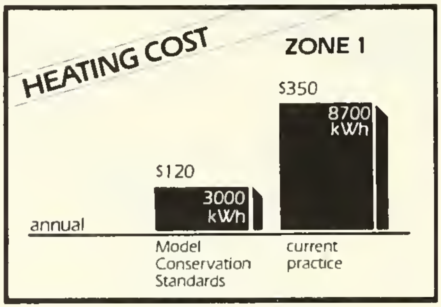

INFILTRATION
.33 ach*
or less
National Association of Homebuilders
3 ach*
Model Conservation Standards
*air changes per hour

6


SOLAR ORIENTATION
6-10%
National Association of Homebuilders
10%
Model Conservation Standards

7



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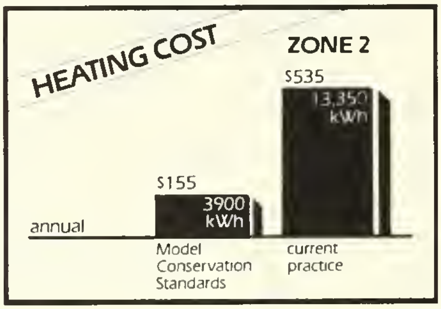

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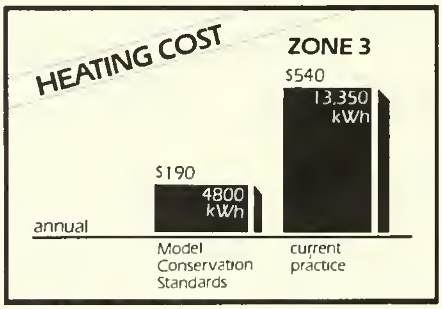


10

Figures are for an average 1,500 square foot home.

homeowner will earn a better rate of return for his or her energy investment than would be probable from other common investments.

The major benefit the homeowner will see, aside from interior comfort, will be lower heating bills. Eckman estimates that the average home built to the MCS will use only one-third of the heating energy of a comparable home built to current standards. (See figures 8-10 for savings in each climate zone.)

In addition, the MCS offer consumers protection against future rate increases. The more energy saved through conservation, the less the region will need to turn to more expensive resources which will increase the rates. For example, new conservation costs 1.8 cents per kilowatt hour versus 4.7 cents for a new coal plant. If the region experiences high economic and population growth, the standards could save the equivalent of three to four new coal plants, according to Eckman.

The Council, itself, cannot impose the standards it has developed. The MCS must be adopted into building codes by the various local and state governments within the region. These entities will also be responsible for implementing and enforcing the codes. For this reason, the Council has asked the Bonneville Power Administration to provide reimbursement for local and state code enforcement.

In addition, those areas which adopt the standards can avoid the possibility of significant surcharges on Bonneville power rates. Areas which do not adopt the model standards or similar measures will be subject to a surcharge of between 10 and 50 percent on wholesale power rates after January 1, 1986. The surcharge is intended to help recover costs to the region if it must turn to more expensive resources in the event conservation measures are not implemented.

Bonneville is also developing an incentive program for those governments which adopt the standards early — before 1986. The city of Tacoma, Washington, was the first early adopter. Other activities associated with the MCS include training programs for builders, architects, code officials, appraisers, and lenders; an information program for the homebuying public; marketing assistance and incentives to builders and homebuyers; development of a system to rate new homes for energy efficiency; and model home demonstration projects.

The latter program is designed to demonstrate "state-of-the-art" technology for making homes energy efficient and to show the public that these homes won't look "funny."

The cost of all conservation activities is small, less than 3/100 of a cent per kilowatt hour added to Bonneville's rates. The payoff, on the other hand, could be enormous, according to the Council's executive director, Edward Sheets.

"Not only do the model standards represent tremendous benefits for the region, they are equally important to the local economy. Installation of energy efficient features will mean more jobs in the local labor force. Purchases of energy efficient equipment, material, and services will put more money into the local marketplace. And lower energy bills will free homeowners to spend more for other goods and services," he points out.■

TYPICAL FEATURES IN THE ENERGY EFFICIENT HOUSE

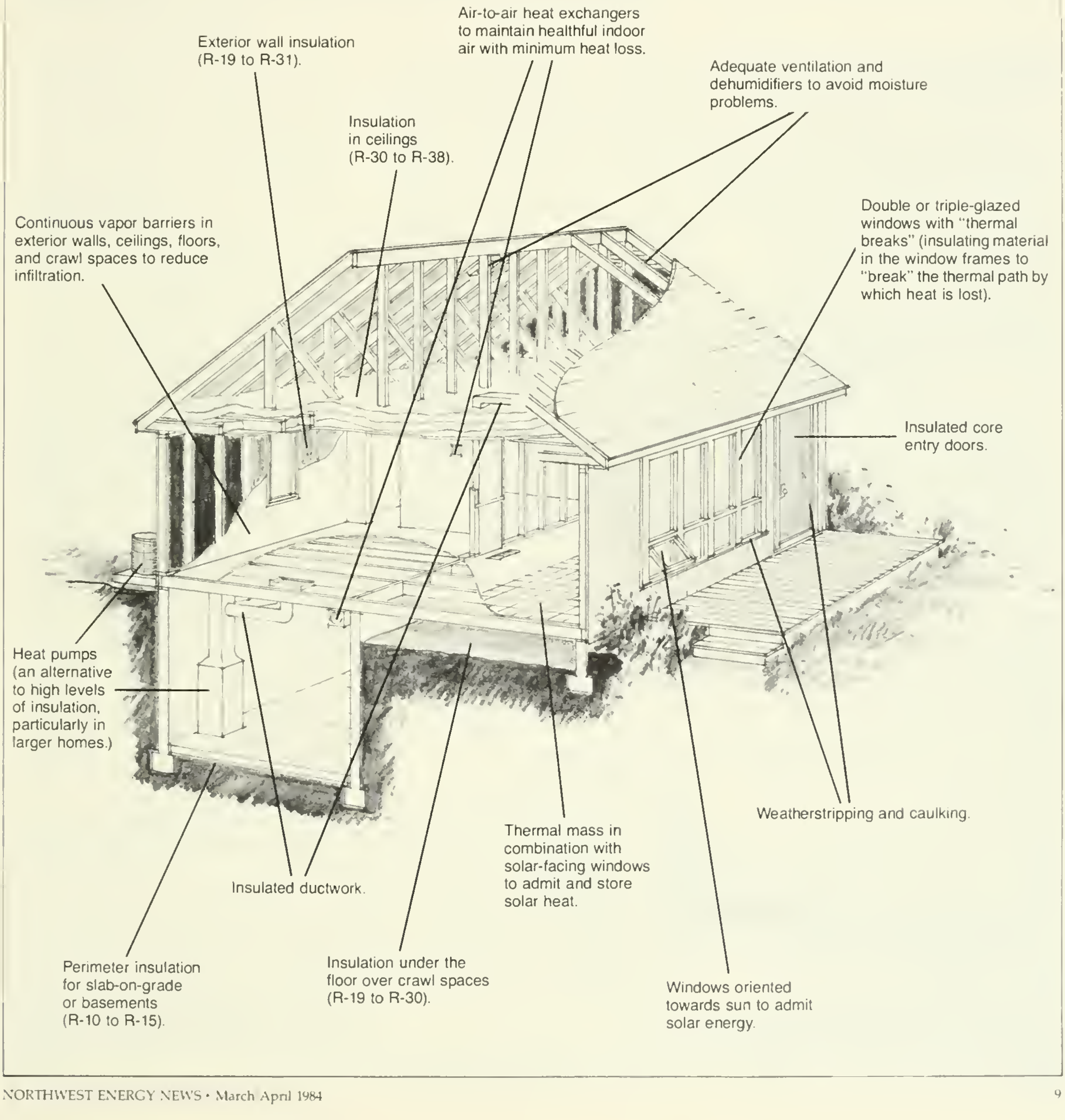

Air-to-air heat exchangers to maintain healthful indoor air with minimum heat loss.
Exterior wall insulation (R-19 to R-31).
Adequate ventilation and dehumidifiers to avoid moisture problems.
Insulation in ceilings (R-30 to R-38).
Double or triple-glazed windows with "thermal breaks" (insulating material in the window frames to "break" the thermal path by which heat is lost).
Continuous vapor barriers in exterior walls, ceilings, floors, and crawl spaces to reduce infiltration.
Insulated core entry doors.
Heat pumps (an alternative to high levels of insulation, particularly in larger homes.)
Weatherstripping and caulking.
Thermal mass in combination with solar-facing windows to admit and store solar heat.
Insulated ductwork.
Perimeter insulation for slab-on-grade or basements (R-10 to R-15).
Insulation under the floor over crawl spaces (R-19 to R-30).
Windows oriented towards sun to admit solar energy.

Illustration by Jim Taylor

MODEL CONSERVATION STANDARDS

HOW THE STANDARDS GREW:

THE BLUEPRINT

by Tom Eckman

The Model Conservation Standards (MCS) are the product of extensive analysis on both the costs and the performance of energy efficient measures for new construction. What follows is a description of how the model standards for residential and commercial construction were developed.

RESIDENTIAL STANDARDS

To develop the residential standards, the Council first had to identify the characteristics of houses built to those current codes or practices which affect space heating. Once these characteristics were known, the Council could then establish a "base case" for analyzing costs and energy savings.

Existing energy codes and a survey of current construction practices helped establish the characteristics currently affecting space heating. These characteristics included the amount of insulation, type of windows, proportion of window area, and the "air tightness" of the house.

In Washington and Oregon, the minimum requirements of the current energy codes were used to establish "base case" building characteristics. Since Idaho and Montana do not have mandatory statewide codes, the Council used an annual survey of current construction practices prepared by Housing Industry Dynamics, Inc., for the Bonneville Power Administration.

Once the base case was established, the Council estimated what it would cost to improve the energy efficiency of structures built to current codes or practices. The consulting agency Ecotope was retained to survey builders, subcontractors and suppliers in the region (over 90 firms were contacted).

To verify the reasonableness of Ecotope's research, the Council staff also used a number of other data sources. These included a 1980 survey by the National Association of Homebuilders Research Foundation, another consultant's survey from the King County area in Washington, and cost estimates from a number of homebuilders. Finally, the Council compared all the cost estimates to those in nationally recognized cost estimating manuals, such as the *National Construction Cost Estimator* and *Means Cost Estimating Manual*.

In some cases, estimates varied little, such as those for installing additional ceiling and underfloor insulation. However, the incremental cost of more efficient windows and of highly insulated walls differed widely from source to source. Where variation was significant, the Council used the average or the median value (whichever was higher) of all estimates.

This method — as opposed to the standard practice of taking the lowest bid — ensured that at least half the contractors providing bids could build to the MCS at or below the cost used by the Council.

The next step was assessing the economic feasibility of various conservation measures. To do this, the Council had to determine how much energy was saved by each measure. The Council used a computer simulation which modeled space heating energy use on a daily basis and took into account weather data, building thermal performance characteristics, and solar radiation data.

Weather and solar radiation data were obtained from the National Weather Service. Thermal performance characteristics were developed using standard heat loss calculation procedures and heat loss values developed by the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE). The computer could then simulate a house's annual heating needs based on weather for its specific site and on its "heat loss" characteristics.

Next, to verify the reasonableness of the computer estimates, the simulation results were compared to actual consumption by houses built in the Northwest and to savings estimates produced by other computer models.

Eight actual homes monitored by public utilities in Eugene and Springfield, Oregon, averaged 2.57 kilowatt hours annually per square foot for electric heating. The computer predicted these same houses would use 2.54 kilowatt hours. Another 23 actual houses monitored by Portland General Electric had an average annual use of 2.88 kilowatt hours per square foot. The computer had predicted 2.7 kilowatt hours for these houses.

Broken down by month, the computer agreed to within .1 kilowatt hour per square foot of actual use. On an annual basis, the difference between projected and actual use for all 31 homes was about what it would take for average use of a solid state color television in one year.

Calculating the economic feasibility of different conservation measures posed new problems. The Northwest Power Act is explicit about evaluating the cost effectiveness of its standards from a regional standpoint. To be cost effective for the region, the MCS must produce energy savings at a lower cost than the next cheapest resource available. However, the Northwest Power Act gives no such guidance for assessing the economic feasibility of the MCS for consumers.

The Council evaluated five different approaches to assessing consumer economic feasibility. These included simple payback (how long it takes to recoup money invested in energy features), discounted payback (how long it takes energy savings to equal cost), internal rate of return (interest rate earned on the investment), additional annual mortgage and energy cost (assesses if the added cost of the mortgage and conservation measures are less than energy costs of a home built to current

A home built to the model standards must cost less to own and operate over its life span than one built to current standards.

standards), and life cycle cost (all costs and benefits over the life of the investment).

After assessing the strengths and weaknesses of each approach, the Council determined a home built to the MCS must cost less to own and operate over its life than one built to current standards.

The standards are considered to meet the feasibility test if this criterion is met. One result is that the investment in energy measures required by the standards will be a better investment than most other alternative investments available to consumers. (See figure 11.)

Once the Council established the base case building characteristics, estimated the cost of improving thermal performance and resulting energy savings, and set criteria for assessing economic feasibility, it had the ingredients for establishing the standards. The final step was choosing the form to express the standards.

Current energy codes come in three principal alternatives: (1) total building performance budgets, (2) component-by-component (i.e. windows, walls, etc.) performance budgets, and (3) prescriptive requirements for individual building components.

The Council chose the first alternative. Setting a total energy budget for residential space heating allows designers, contracters, and local implementing agencies to decide how to meet the standards. The MCS do not stipulate how a home will be built; instead, they establish a ceiling for annual energy use for space heating.

To help the building industry and local code officials determine if a particular building will meet the performance budgets, the Council also provided sample prescriptive paths and sample language for component performance approaches. (See figures 12-14.)

COMMERCIAL STANDARDS

The standards for commercial buildings took a different route. The Council first reviewed existing commercial building standards to evaluate their economic feasibility and cost effectiveness to the region. Three major standards were reviewed — the ASHRAE 90-80 Standard, California's Chapter 24 Energy Code, and the U.S. Department of Energy's Building Energy Performance Standard (BEPS).

BEPS was the most stringent of the standards. It is similar to the Council's residential standards in that it specifies a maximum energy budget for the entire building. However, unlike the Council's residential standards, it provides no alternative prescriptive or component path.

While BEPS provided maximum design flexibility, it left building officials with little information for evaluation without access to a computer simulation. Therefore, the Council did not feel the BEPS standards were practical for the region.

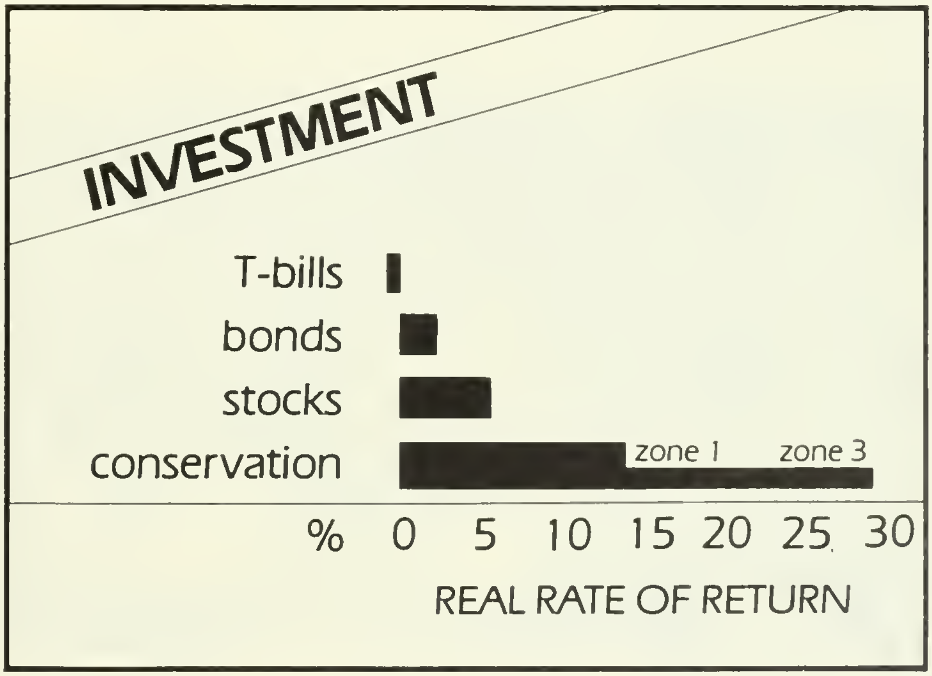
The second standard evaluated, the California Energy Commission's, also specified total building energy performance budgets. In addition, it specified minimum thermal performance for equipment efficiencies and for building envelopes (total enclosure).

The Council compared the California standard to the region's most stringent current standards — the Seattle Energy Code. This code, adopted in 1980, is based on the ASHRAE Standard 90-75. In comparing the two, the Council found the Seattle code could be modified to be more stringent than the California standard. The Council updated the Seattle code to reflect the most recent ASHRAE standard, 90-80.

The Council also made revisions to tighten requirements for lighting budgets and minimum heating, ventilating, and air conditioning (HVAC) equipment efficiencies. The lighting budget revisions were based on work done by the California Energy Commission and by a consulting firm for the Seattle Energy Code. The minimum HVAC equipment efficiencies incorporated into the standards have been specified by ASHRAE for equipment installed as of 1984. The Council considered these standards to be economically feasible since ASHRAE standards require both a consensus of members and economic and technical feasibility.

STANDARDS QUESTIONED

Despite all the extensive analysis and public comment, questions about the cost effectiveness of the standards have come up. Some homebuilders contend certain cost figures, particularly those for walls, are unrealistic. This may be due to the fact



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that many homebuilders are still unfamiliar with the building techniques the MCS require. Most of the higher cost estimates for constructing highly insulated walls came from builders who lacked this experience. Furthermore, each component had to be cost effective, so expensive ones were not averaged in with cheaper ones.

The issue of the impact of the MCS on health has also been raised. Reduced air leakage (infiltration) can affect indoor air quality. The model standards address this by providing for air-to-air heat exchangers to force ventillation where air quality is a concern. Although a relatively new idea for residential construction, such devices have been used commonly in commercial construction and have demonstrated their effectiveness.

While most of the questions and challenges to the model standards can be answered now, the Council is open to fine-tuning the standards to make them more realistic in the event future questions cannot be answered. Overall, however, the Council feels an urgency to implement the Model Conservation Standards quickly because buildings which do not meet these standards represent both a future expense and a lost opportunity for the region.

They are a future expense because they will probably have to be further weatherized at a later date at greater ratepayer expense — or more expensive resources will have to be built. And they are a lost opportunity because it may not be possible to "retrofit" all of the features that could have been incorporated into a building at the time it was built.■

Eckman is a conservation analyst for the Northwest Power Planning Council.

Alternative Paths to Meet the Standards

ZONE 1 (4,000-6,000 Hdd)

		MCS Alternative			
Element	Current Practice	Well Insulated-1	Well Insulated-2	Sun Tempered	Passive Solar Design
Door	No. Reqmnt	R-13	R-13	R-13	No Reqmnt
Ceiling	R-30	R-38	R-38	R-38	R-30
Wall	R-11	R-27	R-19	R-25	R-19
Floor	R-11	R-19	R-30	R-30	R-19
Windows	Double	Triple	Triple	Double	Double
Infiltration	(not specified)	0.4 ACH	0.4 ACH	0.4 ACH	0.3 ACH
Glass (% of floor area)					
Max. area	15-19%	15%	15%	15%	15%
Min. solar				8%	12%

ZONE 2 (6,000-8,000 Hdd)

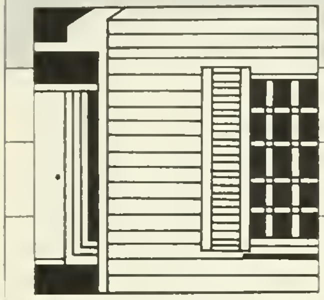
		MCS Alternative		
Element	Current Practice	Well Insulated	Sun Tempered	Passive Solar Design
Door	No Reqmnt	R-13	R-13	R-13
Ceiling	R-30	R-38	R-38	R-30
Wall	R-11 or R-18	R-31	R-27	R-25
Floor	R-11 or R-19	R-30	R-30	R-19
Windows	Double	Triple	Triple	Triple
Infiltration	(not specified)	0.3 ACH	0.3 ACH	0.3 ACH
Glass (% of floor area)				
Max. area	15-17%	15%	15%	15%
Min. solar			8%	10%

ZONE 3 (Over 8,000 Hdd)

		MCS Alternative		
Element	Current Practice	Well Insulated	Sun Tempered	Passive Solar Design
Door	No Reqmnt	R-13	R-13	R-13
Ceiling	R-38	R-38	R-38	R-38
Wall	R-11 or R-18	R-31	R-27	R-25
Floor	R-19	R-30	R-30	R-19
Windows	Double	Triple	Triple	Triple
Infiltration	(not specified)	0.3 ACH	0.3 ACH	0.3 ACH
Glass (% of floor area)				
Max. area	13%	15%	15%	15%
Min. solar			8%	10%

ACH = air changes per hour
Hdd = heating degree days

figures 12, 13, 14



HOW THE STANDARDS WORK:

THE SHOWCASE

by Richard H. Watson

The meeting room in the Bellingham Holiday Inn was filled to capacity. The majority of those present were homebuilders with a sprinkling of architects, realtors, and lenders for good measure. The event that had brought them out on this cold evening in early January was a briefing to inform them about the Residential Standards Demonstration Program.

This same scene was repeated over the following three weeks in Tacoma, Vancouver, Richland, Yakima, Spokane, and Bellevue. In all, over 1,700 members of Washington's homebuilding industry have made the effort to find out how they can participate in the world's largest demonstration of very energy efficient residential construction. By the time you read this article, hundreds more will have taken part in similar briefings in Oregon, Idaho, and Montana.

By late spring and early summer, multifamily buildings meeting the Northwest Power Planning Council's Model Conservation Standards (MCS) will be under construction. By next fall and winter, Northwest families will be living in these homes, enjoying the benefits of lower heating costs.

The Residential Standards Demonstration Program (RSDP) is being administered by the energy agencies of the Northwest states (the Washington State Energy Office, the Oregon Department of Energy, the Idaho Department of Water Resources, and the Montana Department of Natural Resources and Conservation) with funding from the Bonneville Power Administration. The program is in response to Action Item 2.10 of the Council's Two-Year Action Plan.

When the Council adopted the model standards it was well aware that the standards represented a significant advance over current building practice. It was also aware that there was no consensus within the building industry about either the additional costs involved in building to the standards or the energy savings which would result. To address these problems, the Council called for BPA to carry out a large scale demonstration of homes built to the standards. The result was the Residential Standards Demonstration Program.

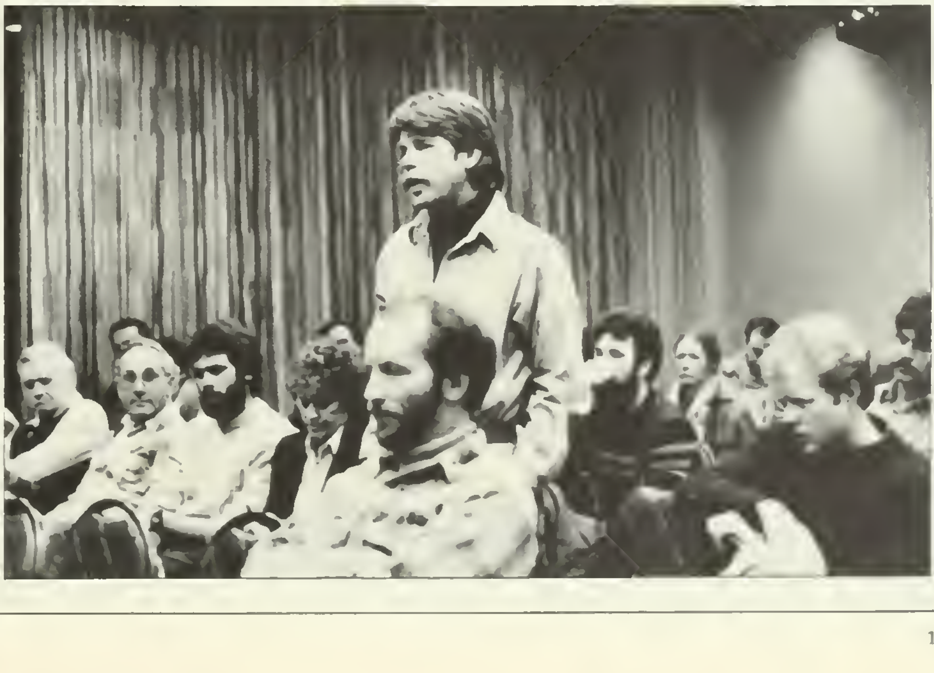
This program has two basic, interrelated objectives: to involve a broad spectrum of the homebuilding industry in constructing homes which meet the standards; and to demonstrate in a large scale field application the additional costs and energy savings which result from the standards. To accomplish these objectives the RSDP involves both technology transfer and data monitoring.

TECHNOLOGY TRANSFER

The importance of the technology transfer aspects of the RSDP is underscored by Washington Council Member Chuck Collins' observation that "we never had a builder who is building very energy efficient homes testify against the model standards and we never had a builder who isn't, testifying in favor of them." This anecdote is borne out by the cost data the Council gathered during the development of the MCS.

Uniformly, the cost figures supplied by the builders of very energy efficient homes are at the low end of the cost range while those building to current energy codes supplied cost estimates at the high end. There appears to be a strong "learning curve" effect. The RSDP provides an opportunity to help a relatively large number of builders up that learning curve.

Missoula, Montana builder Steve Loken raises question at builder's information meeting conducted by Council members Keith Colbo and Gerald Mueller and Council staff member Tom Eckman. Meetings, such as this one in Montana, are being conducted throughout the region.



Bernd Hoffmann photo

MODEL CONSERVATION STANDARDS

> *We never had a builder who is building very energy efficient homes testify against the model standards, and we never had a builder who isn't, testifying in favor of them.* –Charles Collins

The vehicle for moving up the learning curve is training. Each state will be providing training to particular builders. In Washington the training has been contracted to the Energy Business Association of Washington. The training team assembled by EBA includes local architects and designers who have long experience in energy efficient building design, a member of the Canadian R-2000 training team, and, perhaps most important, a Washington homebuilder with several super energy efficient homes to his credit. The goal of the training is to transfer a working understanding of the "hows" and "how not tos" of very energy efficient construction from current practitioners to those otherwise experienced builders who have not yet built super energy efficient homes.

The training curriculum is designed to cover the essential elements of very energy efficient construction in considerable detail. Among the topics to be covered are advanced framing techniques for high R-value walls and ceilings; foundation and slab perimeter insulation; vapor and infiltration barrier materials and techniques to achieve low infiltration without moisture problems; and sizing and installation of air-to-air heat exchangers (devices which exchange indoor air for fresh outdoor air while recovering most of the energy in the exhaust air).

The training materials emphasize slides of "at-the-site" applications and hands-on demonstrations as well as a detailed manual the builder can use during actual design and construction. Once the first demonstration homes have reached the appropriate stage of construction there will also be a series of on-site "blower door" tests to demonstrate where significant air leakage occurs in a house and how to stop those leaks.

The amount of material to be covered in the training requires a two-day training session. There was initially a good deal of concern that builders would be discouraged from participating in the program by the length of the session. Those attending the Washington briefings, however, indicated overwhelmingly that they would participate in the two-day training, whether or not they were chosen for the Demonstration Program. (General builder training will be provided by the state energy agencies as part of their building code technical assistance activities.)

The ultimate technology transfer will, of course, occur when the builder puts the training into practice in construction of the demonstration home. The interaction of the training with each builder's experience and special skills should result in many new solutions to the problems of very energy efficient construction.

MONITORING

There have been energy efficient home demonstration programs before, most notably the Canadian R-2000 program. What makes the Residential Standards Demonstration Program unique is the large scale monitoring of both construction costs and energy use. For the RSDP, the monitoring is essential to demonstrating the costs and energy savings of model standards homes.

Energy Use

The most straightforward aspect of the RSDP monitoring effort involves the monitoring of energy use. The majority of homes built in the demonstration will be "triple metered" as will a corresponding number of existing "control" homes built in recent years to current energy codes. Triple metering means that separate kilowatt-hour meters will be placed on the heating circuit, the domestic hot water circuit, and the lights/appliances circuit. Cooperating homeowners will be paid to periodically record the meter readings and indoor and outdoor temperatures. Analysis of these data will yield a good comparison of the heating energy use of homes built to the MCS with that of homes built to current codes.

To achieve a more rigorous comparison, one hundred "matched pair" homes will be built and monitored using a sophisticated multi-channel remote monitoring system to measure energy use, temperatures and other potentially important parameters several times each day. The matched pair homes will be two otherwise identical homes except that one is built to the MCS and one is built to current energy codes. Builders will be paid a special incentive to build the current code home. The matched pair homes in conjunction with the other demonstration homes and their controls will result in the most extensive residential energy use data base ever developed.

Costs

More difficult but equally important is the monitoring of the additional construction costs of building a home to the MCS. What makes this monitoring more difficult is that it must be done by people rather than meters. Costs will be tracked by participating builders using a cost accounting system being developed by the National Homebuilders Association Area XV. Those builders who are constructing only demonstration homes will record actual material and labor costs for those elements of the home which differ from current code and will estimate the costs of building those elements to current code. Those builders who are building matched pair homes will record actual costs for both the model standards and the current code homes.

Another aspect of the cost monitoring is an attempt to quantify the learning curve. The training will bring builders part way up the learning curve. It won't, however, bring them to the point that actual building three or four homes to the MCS will. The learning curve effect will be characterized in two ways. First, an attempt will be made to include builders already experienced in very energy efficient construction so that their costs can be compared with those of the first-time MCS builders. Second, some builders will construct up to five demonstration homes in sequence using the same crews. Direct monitoring of the costs of these homes should yield a good fix on the learning curve.

WHY SHOULD BUILDERS PARTICIPATE?

The technology transfer and monitoring aspects of the RSDP may be of great interest to the Council, BPA, and the state en-

> *Energy efficiency is becoming an important marketing tool, and many builders are eager to learn how to incorporate greater energy efficiency in their homes.*

ergy agencies, but why are builders showing such great interest in participating? The answer is that the RSDP gives builders a low risk way of getting in on the ground floor of a growing segment of the housing market — the market for very energy efficient homes. Energy efficiency is becoming an important marketing tool, and many builders are eager to learn how to incorporate greater energy efficiency in their homes.

The demonstration program reduces the risk of getting into very energy efficient construction in several important ways. First, there is the training. The training participating builders receive will substantially reduce the costly trial and error associated with changing to more energy efficient construction. In addition, participating builders will be able to call on the state energy agencies for technical assistance in design review and in resolving on-site problems.

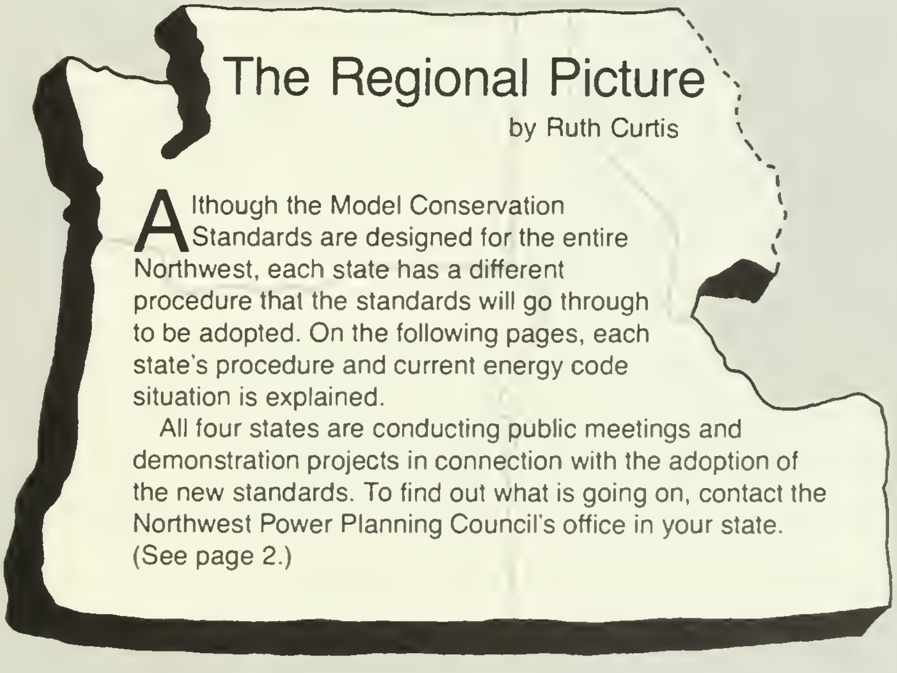
Second, builders participating in the RSDP will benefit from marketing assistance. The demonstration homes will be highly visible examples of what homes built to the Model Conservation Standards will be like. The states will be identifying these homes with distinctive logos certifying them to be homes which meet the Model Conservation Standards and helping focus the attention of the home-buying public on these homes. At the same time, BPA will be mounting an effort to inform the public of the benefits of very energy efficient construction.

Third, there is the bottom line. Builders will receive cash incentives for participating in the RSDP. The incentive is intended to compensate the builder both for the additional responsibilities imposed by RSDP and for part of the incremental costs of building to the standards. How the incentive is paid to the builder will vary from state to state, but the amount will total from approximately three to five thousand dollars for a typical 1,500 square foot home.

Finally, there is the information which will be developed by the Demonstration Program. In most states, the region's homebuilders' associations have generally opposed the Model Conservation Standards. They have, however, uniformly supported the demonstration and have been active, constructive participants on the state steering committees established to design and oversee the program. The reason for this support is that the associations see the demonstration as the one way to answer the questions they have about the Model Standards.

By being active participants in demonstrating the costs and energy savings associated with the standards, builders are helping define their role in meeting the Northwest's future electrical needs at the lowest possible cost.■

Watson is director of the Washington State Energy Office.



The Regional Picture

by Ruth Curtis

Although the Model Conservation Standards are designed for the entire Northwest, each state has a different procedure that the standards will go through to be adopted. On the following pages, each state's procedure and current energy code situation is explained.

All four states are conducting public meetings and demonstration projects in connection with the adoption of the new standards. To find out what is going on, contact the Northwest Power Planning Council's office in your state. (See page 2.)

MODEL CONSERVATION STANDARDS

A BUILDER AND HOMEOWNER SPEAK OUT

by Susan Skog

By mid-December, temperatures had already plunged to 10 below in Twin Falls, Idaho, but you'd have thought it was the dog days of summer from looking at Diana VanHooser's heating bills. Though heating requirements in the southern Idaho area have been 48 percent above 1982 levels, VanHooser's electricity bills from July through December 1983 were only about $40.

VanHooser is one of several new homeowners in the Magic Valley area of Idaho who are realizing both the financial and aesthetic benefits of living in super-insulated homes built by Whitehead Home and Energy, which is owned and managed by father and son Dick and Dave Whitehead.

The Whiteheads began selling storm windows, insulation and other energy conservation materials six years ago. But they diversified their business in a big way several years ago when they began constructing super-insulated homes, or "zero energy concept homes," as they call them.

Whitehead Home and Energy, like many other construction companies around the region, banked on the fact that energy-efficient homes were a good investment — and that consumers were willing to pay more to own them. Despite their convictions, the Whiteheads took a lot of heat from their peers in the building industry.

"They (other contractors) told us seven years ago that people wouldn't pay for energy-efficient homes. I got tired of fighting them and began building them," Dave Whitehead says.

So far, the Whiteheads have been right on all counts. Over the past two years, the company has built nine super-insulated homes which have quietly, but swiftly, become the focus of much attention in the Magic Valley. Outside of some area home shows and displays at county fairs, Whitehead hasn't had to advertise his product because word-of-mouth has generated most of the company's customers. "If people want you, they'll find you," Whitehead says.

The Whitehead formula for successful super-insulated construction combines increased insulation and decreased infiltration — ultimately creating a tighter, more energy-efficient home.

The company is continually researching and upgrading its product. Homes typically feature R-60 attic insulation; R-42 wall insulation; and R-19 to R-30 floor insulation or, if a basement is included, R-20 insulation. Double-glazed windows with an inside storm window are used, and extensive caulking is done to control infiltration. A continuous vapor barrier is also a must to reduce infiltration, Whitehead says. An air-to-air heat exchanger is installed in the homes to control humidity, he adds.

If possible, the homes are oriented for southern solar gain, and the garage is built on the west side of the home to blunt the impact of the Magic Valley's notorious winter winds.

The passive solar benefits delight VanHooser, who is amazed at the comfort the sun provides for the majority of her living space which faces the south. "It's absolutely amazing how fast the temperature in that area of the house goes to 72 degrees," she says. She usually keeps her thermostat at 70 degrees, she adds.

Russell Morgan, Whitehead construction manager, says quality control is a critical link in the construction of a super insulated home. "From the start of construction to the very end, we're interested in quality control, making sure every hole's plugged."

The strict attention to detail often scares off prospective builders of super-insulated homes, according to Whitehead. "They're afraid of building energy efficient homes because you have to oversee them more during the construction process," he said. "Everything must be done precisely, or the house won't function as it should."

Whitehead readily admits that his super-insulated homes cost an additional $3 to $4 per square-foot to construct. But he's quick to add that they are about one-third more efficient than homes built to current practices. The homes also require much smaller furnaces. VanHooser's 1,850 square-foot home is heated with a small 5 kilowatt electric furnace, which is at least 50 percent smaller than one usually required in a typical home that size, according to Idaho Power representative Bill Specht.

The Twin Falls Idaho Power office has monitored the performance of VanHooser's home since October 1982 and is encouraged by what it's found. From October 1982 through June 1983 VanHooser's electrical payments were about $93, he said.

"It confirms what Idaho Power's been saying for 20 years. Insulation, tightening up the home and reducing the air changes per hour are definitely going to pay dividends for home owners," says Specht.

The Whitehead homes, especially VanHooser's, are creating quite a stir, Specht said. When other homeowners hear about VanHooser's ridiculously low electric bills, they ask, "How in the world did they accomplish that?" he said.

Consumers seem to be willing to spend

They told us seven years ago that
people wouldn't pay for energy-efficient homes.
I got tired of fighting them and began building them.
–Dave Whitehead

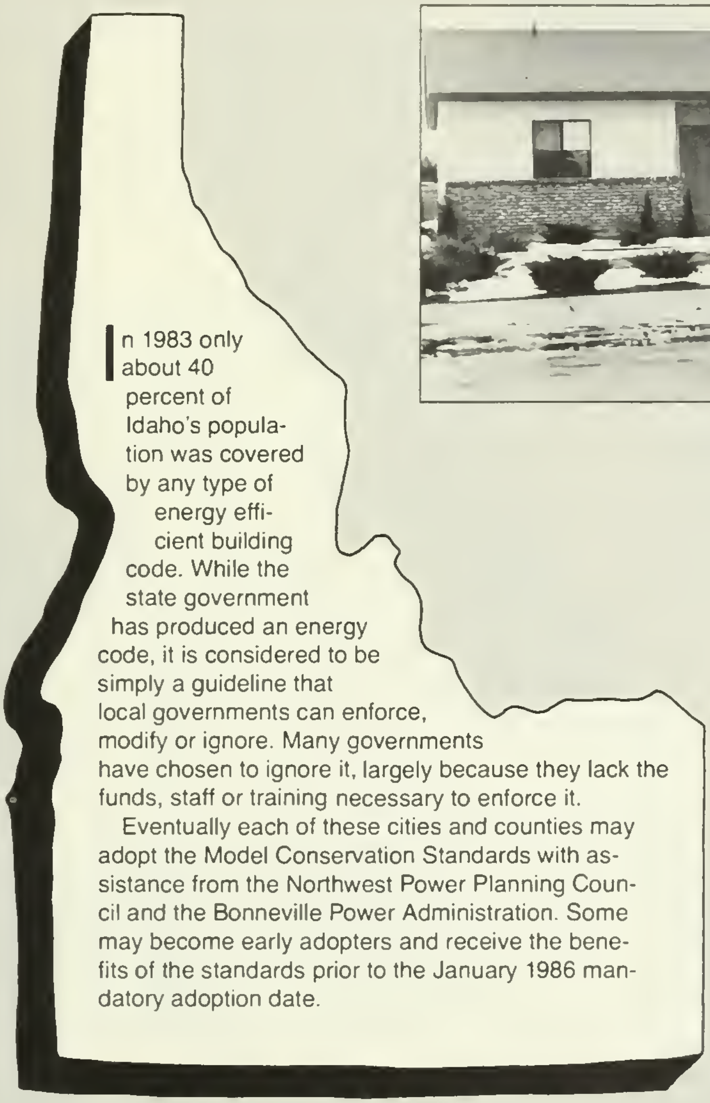
the additional money for lower heating costs, Specht says. The cost of energy won't remain static, and the company is encouraging consumers to build as efficiently as possible, he adds.

Convinced that his form of construction makes sense, Whitehead hopes to begin construction of a 3,200 square-foot, super-insulated home in the next four weeks, with the possibility of constructing two more homes this spring. He predicts that in 10 to 15 years most builders will have converted to the super-insulation field, especially for large home construction.

But in the meantime, he's enjoying the satisfaction of his customers, like VanHooser. "I just feel it's foolish to build a home without the proper insulation and passive solar design," she says. "If I built another one, it would be the same type."

Whitehead is also enjoying the benefits of his own super-insulated home, which was completed in June. The 4,700 square-foot home is proving to be a high performer, outstripping even his own expectations.

Whitehead projected his energy bills would possibly reach $250 for the entire year, but even with the recent winter much colder than normal, he now thinks his bill will come in around $200. With pleasant surprises like that, it's easy to see why Whitehead thinks, "It's crazy to build houses any other way." ■



In 1983 only about 40 percent of Idaho's population was covered by any type of energy efficient building code. While the state government has produced an energy code, it is considered to be simply a guideline that local governments can enforce, modify or ignore. Many governments have chosen to ignore it, largely because they lack the funds, staff or training necessary to enforce it.

Eventually each of these cities and counties may adopt the Model Conservation Standards with assistance from the Northwest Power Planning Council and the Bonneville Power Administration. Some may become early adopters and receive the benefits of the standards prior to the January 1986 mandatory adoption date.

Electric bills for the VanHooser home in Twin Falls, Idaho, averaged less than $7 a month. Homeowner Diana VanHooser is pictured with Kim Nilsen (left), former construction manager of Whitehead Home and Energy, and Dave Whitehead (right), co-owner of Whitehead Home and Energy.

Photos by Carol Brown

MODEL CONSERVATION STANDARDS

WHAT HAPPENS NEXT

ADOPTION

by Susan Skog

Ever since the Northwest Power Planning Council called for state and local governments and authorized utilities to adopt its model conservation standards for new buildings by January 1986, meeting rooms have been abuzz with discussions of how the ambitious program will be carried out in the Northwest.

For the past nine months, from Missoula to Tacoma, representatives of local and state governments, utilities, consumer groups, the Bonneville Power Administration and the Council have huddled to try to iron out the obstacles that stand in the way of adoption of the standards.

But of all the issues that political jurisdictions are grappling with in considering adoption of the model standards, few strike a more sensitive chord than the question of who will pay for enforcement of the standards and how long the financial support might last.

The Council's staff liaison with local governments in the region, Jim Nybo, works closely with the local government associations in the four states. He recently observed, "It is ironic — but for local officials probably not surprising — that the most significant near-term action resulting from the 1980 Northwest Power Act and the Council's regional plan is coming to rest right in the lap of the region's local governments."

Many of the questions center around a section in the Council's 20-year power plan which states that BPA should develop and implement a program to reimburse state and local governments for the full cost of adopting and enforcing all model conservation standards . . . as long as the standards program is cost effective. The Plan also calls for enforcement assistance throughout the region including areas served by utilities not currently getting power from BPA. The Council urged BPA to have the code reimbursement program operating by next January in western Montana, Oregon, Washington, and Idaho, regardless of utility service territories.

The model standards would likely be adopted in the form of building codes by local or state governments, which now enforce a variety of codes. If political jurisdictions fail to adopt and enforce the standards or refuse to carry out another program to achieve comparable energy savings, they will be subject to a 10 to 50 percent surcharge on wholesale power they purchase from BPA. (The surcharge provision is found in the Northwest Power Act of 1980, which instructed the Council to develop model standards.)

With 1986 looming closer and closer, local and state governments are hoping a clearer image of the code reimbursement picture will soon emerge for those which adopt before 1986 — known as "early adopters" — and for those which adopt after the 1986 deadline. Though some definition of the early adopter question may occur in the coming months, it appears the long-term reimbursement picture will still remain cloudy.

BPA is hoping to encourage as many local and state jurisdictions as possible to adopt the standards before 1986, and the agency has budgeted "limited funding" for fiscal years 1984 and 1985 to "provide reasonable, adequate and acceptable" financial support for early adopters, according to Sydney Berwager, BPA director of technical and marketing support.

Bonneville wants to support early adopters "any way we can because they'll be blazing the trail," Berwager said. "We want to make their experience as smooth an experience as we can."

In April, the agency expects to distribute draft guidelines illustrating the type of information a local or state government must provide BPA to qualify for code enforcement assistance, according to Peggy Crossman, BPA program analyst in conservation.

BPA would prefer to reimburse only those early adopters which lie in the service territories of utilities which signed long-term conservation contracts last fall with the agency, Berwager said. But since it doesn't anticipate being deluged with numerous early adopters, Bonneville is confident it will be able to provide early adopter assistance in FY84-85 across the region, regardless of utility service areas, he said.

From early adopters, like Tacoma, Washington, BPA hopes to glean valuable information about the costs and administrative and technical needs of cities, counties and states which will be required to inspect new buildings for compliance with higher energy efficiency requirements. The agency will then distill the data it receives from early adopters to design its

Few issues strike a more sensitive chord than the question of who will pay for enforcement of the standards.

post-1986 program on code reimbursement.

While no decisions have been made about how local and state governments will be reimbursed for adoption of the standards after 1986, current thinking is that the assistance will be extended for a "limited time" and then "tapered off," Berwager said. It's also unlikely the agency will have a long-term program to launch in the region by January, he said.

Nybo said, "If the region is to meet the January 1986 target for adoption and enforcement then the reimbursement program details have to be known well in advance." Every legislature in the region will be convening in January of 1985 and virtually every jurisdiction will be making fiscal and organizational decisions for 1986 during the first half and in many cases the first quarter of 1985. "It is unreasonable to expect state legislatures, state agencies, and local governments to adopt in 1985 without that information," Nybo said.

As one might expect, BPA is finding itself in difficult straits as it tries to craft a program which equitably meets the diverse needs of some 900 local governments and the four states in the region. Compounding the difficulty, BPA must also wade into the complex area of budgeting and earmark funding for long-term reimbursement as the agency prepares its fiscal year 1986 rate proposal, scheduled for release this summer.

With only Tacoma identified so far to guide the way through the model standards enforcement maze, the financial needs of local governments — ranging from Moscow, Idaho, which issued 28 new single-family housing permits in 1983, to Seattle with 427 — are unclear. Nevertheless, BPA anticipates including long-term code reimbursement funding in the upcoming rate case.

To get a fix on what governments will need to enforce the model standards, BPA recently assembled a task force of local and state government representatives, including building officials. The task force has met twice since its formation in December to provide BPA with information about the types of standards currently enforced in the region, what additional steps might be needed to enforce a much stiffer code, and how best to address any obstacles which prevent smooth adoption and implementation of the standards. The task force provides BPA with a valuable "reality check" for reimbursement ideas, according to Crossman.

Though building practices, code enforcement and administrative and legal constraints may differ widely from state to state, one concern cuts across all jurisdictional boundaries. Local governments are being asked to play an entirely new role, at a time when their resources and budgets have been drastically reduced.

City and county officials are understandably wary about letting their communities commit to playing an entirely

Despite Montana snows, this energy-efficient 2,300 square foot house built by Linda Brock in Helena stays cozy.

Terry Wilner photo

Montana's legislature has formed an interim committee to study what changes are needed in current laws and regulations to implement the model conservation standards.

Montana's existing energy code is what the building industry calls a "minimum and maximum standard." This means cities and counties cannot adopt codes that are either less or more strict than the state code, but they can choose not to enforce a code at all. If a town decides not to enforce a code, the state government is responsible for enforcement. However, the state only has authority over dwellings larger than a four-plex and has very few inspectors to cover an extremely large state. This situation has led to uneven enforcement throughout the state.

In large cities the traditional building codes (plumbing, electrical, etc.) are generally administered by local governments. The energy codes may be enforced defacto by financial institutions, which are more willing to provide mortgages on homes that are energy efficient.

> *It is ironic that the most significant near-term action resulting from the Act and the plan is coming to rest right in the lap of local governments.* *–Jim Nybo*

new game for which the rules are still undefined. At the Council (Feb. 1-2) meeting in Coeur d'Alene, Lewiston, Idaho City Council member Marion Shinn testified: "We can't honestly extend the taxpayers' money in that area (model standards enforcement) unless we know what BPA will do to us and for us . . ."

Another Idaho local official, Ada County Building Department Director Glen Stephens, told the Council that local governments must "have a more definitive idea" of the amount of assistance they might be eligible for, when it might be received and how long it will last. "We need to nail down the more nebulous features of what local governments are expected to do and what they can expect."

Association of Idaho Cities (AIC) Energy Specialist Dave Williams said local officials are wondering, "Am I susceptible; what's this mandate mean; who's responsible; and what's it going to cost?"

Unless local governments have a clear understanding of the benefits of adopting the model standards, few will look at the issue seriously, Williams predicted. Local governments will not "jump at the bait unless the bait is clearly dangled in front of them," he said.

This spring the Idaho Department of Water Resources, with assistance from the AIC, will initiate a study of at least ten communities to assess their administrative and financial needs in enforcing the Council's standards. The local governments will be asked to simulate enforcement of the Council's standards.

Arlene Braun, policy coordinator for the Montana Local Government Energy Office, which serves cities and counties, echoes Williams' concerns. Until local and state governments have a specific response from BPA, "we're just talking in the theoretical," she said. "City councils and county commissions are saying, 'Come back when you have more specific information,'" she said.

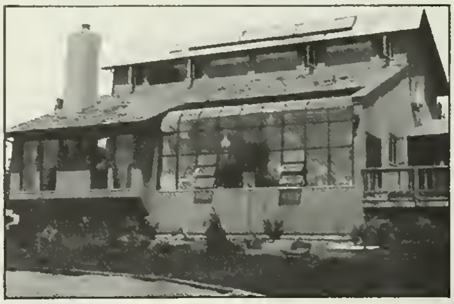
The Montana Legislature created an interim committee to study what legislative action is needed to implement the Council's energy plan, including the model standards. As the committee meets in the coming months, it needs concrete information about the amount of financial assistance Montana could receive from BPA, Braun said. If that piece of the puzzle is missing, it will hamper the committee's efforts to strategize for the 1985 legislative session. "That's one piece of information they need," she said. "They won't recommend statewide standards in a vacuum."

Fred Neal, senior staff associate, League of Oregon Cities, said his association is working to resolve many issues surrounding the Council's standards, such as their cost effectiveness in Oregon. Neal said the Oregon Department of Commerce hopes to form a committee of state and local building officials and homebuilders to identify the costs that might result from enforcing the model standards.

Neal is adamant that any financial assistance offered by BPA must be offered on an ongoing basis. "Since we're acquiring an energy resource, those ongoing enforcement efforts must be considered part

Oregon also has a minimum and maximum standard and, as in Montana, cities and counties can choose whether they want to enforce it or leave that job for the state. In general, smaller, less densely populated areas let the state do the enforcement work.

The state energy code is due to be revised in 1985. The Oregon Department of Energy is reviewing the Model Conservation Standards and will recommend changes to the code. These recommendations, developed with the assistance of the Energy Conservation Board and the Structural Code Advisory Board will be presented to the Department of Commerce's Building Code Division to be acted upon by its administrator. A November 1985 adoption date is anticipated with the codes going into effect December 31, 1985.



This energy-efficient house in Tumalo, Oregon, built by Dennis Staines invites solar energy with its window walls.

Dennis Staines photo

of the resource purchase" by BPA just as the ongoing maintenance and operation costs of a coal plant are absorbed by a utility, he said.

BPA recognizes it "owes it to the region" to start sending some signals about how it will help local governments gear up and enforce the standards, Berwager said. But a number of regional uncertainties stymie Bonneville's attempts to draw up a regionwide approach to building code assistance.

First, few of the region's private utilities, which serve 60 percent of the regional residential load, are purchasing power from BPA under long-term power sales contracts signed in 1982. And since the region is awash in surplus power, few of the utilities envision purchasing power under the contract for some time.

Another contract offered by BPA last fall — a long-term conservation agreement — was rejected by all the private utilities and some public utilities, including Seattle and Tacoma. Thus, the limited reach of BPA's electricity sales and conservation programs leads many to question which local governments will actually benefit from financial assistance and how utilities could be surcharged, if jurisdictions in their areas chose not to adopt the standards.

BPA agrees that conservation and the model standards are the centerpiece of the Council's approach to new energy development in the Northwest, Berwager said. The agency, though, should not exclusively be responsible for making the plan a reality, and the Council should continue to work to bring the private utilities into the fold, he added.

As the Northwest continues to wrestle with these problems, one thing remains certain: it still makes sense to build a new building right the first time. Montana Council member Gerald Mueller remarked at the Council's Coeur d'Alene meeting that the model standards are a wise investment for the region, despite the temporary glut of power in the Northwest.

"When you build a house, you get one shot to build it right," and the home continues to use energy for an average 54 years, Mueller said. "Is the surplus going to last that long? I don't think so," he added. ■

Attention architects, builders, code officials, etc.

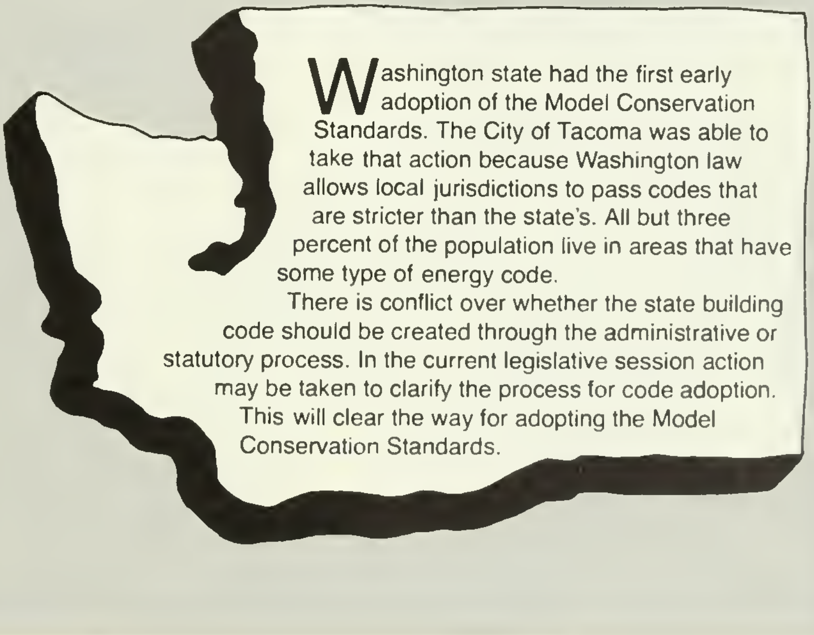
Do you have a technical question about the standards? Send your question(s) into *Energy News* (see address inside front cover). The Council staff is currently preparing a technical question and answer sheet on the Model Conservation Standards. We will include your question and will see that you receive a copy of the Q&A sheet.

Watch your state papers for announcements of meetings in your state designed to provide you with information on the standards or call the Northwest Power Planning Council office in your state (see inside cover).

For sample designs of energy-efficient homes designed specifically for the Northwest, write to the National Center for Appropriate Technology, P.O. Box 3838, Butte, Montana 59702. Ask for their "Superinsulated House Plans."

This new house could fit into an older neighborhood, but it still meets the model conservation standards. Built by Sun's Touch Corporation in Olympia, Washington, the house features R-26 walls, R-45 ceilings and R-19 under the floor.

Mickey Riley photo



Washington state had the first early adoption of the Model Conservation Standards. The City of Tacoma was able to take that action because Washington law allows local jurisdictions to pass codes that are stricter than the state's. All but three percent of the population live in areas that have some type of energy code.

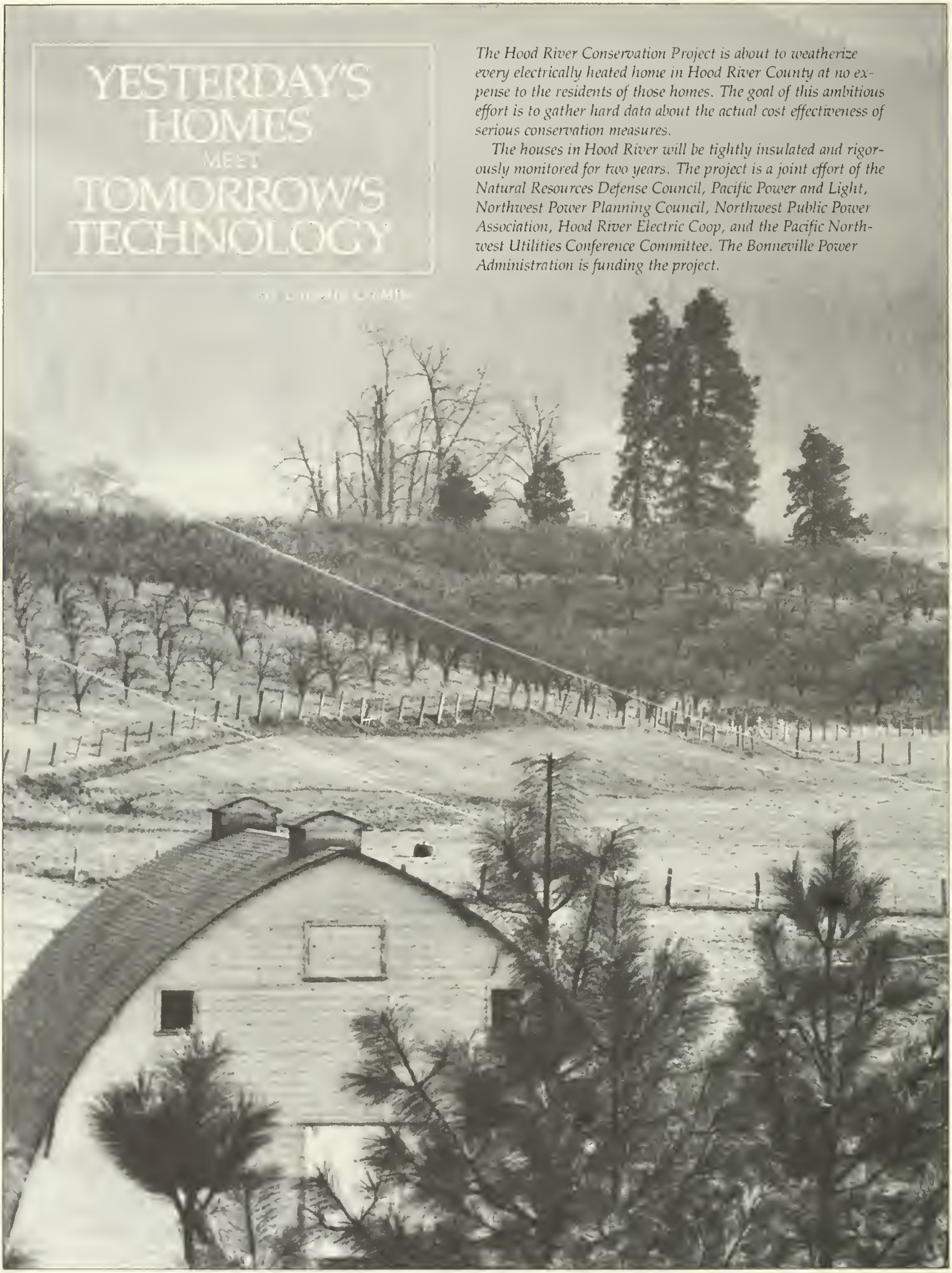
There is conflict over whether the state building code should be created through the administrative or statutory process. In the current legislative session action may be taken to clarify the process for code adoption. This will clear the way for adopting the Model Conservation Standards.

YESTERDAY'S HOMES MEET TOMORROW'S TECHNOLOGY

by Carlotta Collette

The Hood River Conservation Project is about to weatherize every electrically heated home in Hood River County at no expense to the residents of those homes. The goal of this ambitious effort is to gather hard data about the actual cost effectiveness of serious conservation measures.

The houses in Hood River will be tightly insulated and rigorously monitored for two years. The project is a joint effort of the Natural Resources Defense Council, Pacific Power and Light, Northwest Power Planning Council, Northwest Public Power Association, Hood River Electric Coop, and the Pacific Northwest Utilities Conference Committee. The Bonneville Power Administration is funding the project.



Photos by Carlotta Collette

There's a lookout point in Hood River County where you can stand and observe as many as three different kinds of weather all at once.

If you start in town, down by the Columbia River at sea level and make your way up the valley towards the top of the county near Parkdale, you gain about 2,500 feet in elevation and an inch a mile in annual rainfall. Traveling east towards The Dalles, you lose an inch each mile as you make your way from the maritime climate west of the Cascades to the semi-arid higher country of Eastern Oregon.

In the Hood River Valley, one of America's finest fruit growing areas, the year is divided into bloom seasons and harvest seasons. Each slope of mountain and bend of river can create a new microclimate, frustrating any effort to generalize about "prevailing conditions." This is what's known as a "transition zone," and it was just this diversity that attracted the team of Hood River Conservation Project planners.

Hood River County's heterogeneity makes it seem a lot like other parts of the Northwest. It just depends on where in the valley you're standing at any given moment. If you're interested in learning about the effects of conservation on overall energy use in different Northwest climates, Hood River County is a good place to monitor. It's got a little bit of everywhere in one small area.

Hood River's diversity goes beyond its climate. Houses range from high Victorian to modern ranch, and the population is spread out in an urban, suburban and rural configuration that fairly mirrors the rest of Bonneville's territory.

Hood River County was about as perfect a test site as could be found for quantifying a lot of assumptions that had been made in an effort to plan for the energy future of this region. With $20 million on the table and a brainstorm of "what ifs" to answer, the team that is coordinating this ambitious demonstration project has more than a dozen separate research studies going on at once.

These studies are predicated on a set of major objectives: to determine how much of a community will participate in a weatherization effort when ability to pay is not a factor; to analyze energy savings in response to high conservation standards and to compare these actual savings with projected or computer-modeled ones; to determine what effect conservation on such a grand scale will have on regional capacity and distribution; and to refine a process for carrying out projects of this magnitude in other small communities.

"Process" was an issue from the beginning, and in Hood River there are two distinct aspects to the question. On the one hand, there is the coalition of organizations who are sponsoring the project and their often very different points of view. The notion of progressive environmentalists, utility representatives, and BPA all sitting down together to scope out and implement one enormous task as a working team would have boggled anyone's imagination only a few years ago. But in Hood River, it's happening. A slow and deliberate working through of differences is taking place that is itself a model for the region.

Beyond this there is the question of the big bureaucracy and the small town. Just how do you approach a town like Hood River with an idea as big as the Hood River Conservation Project?

"No one has ever tried to quantify the subjective inference that we've drawn about who works in communities and how you work *with* them," explains John Jones, the project's administrator and a PP&L employee. "How do you communicate to the rather small community? We did a community assessment before the project . . . and found that, as in most communities, there's a distrust for big government, big business and outsiders. We're all three. So we made a committment early on to employ local people as much as possible, behave like local people and live in Hood River."

Over the next two years, everyone involved in the project will be surveyed in an ongoing effort to gauge any changes in attitude on the part of either the citizenry or the staff of the project. One good indicator of the acceptance of the project by the community is that 60 percent of the eligible residents have already signed up — and there's been almost no marketing done.

So, from its downtown Hood River storefront, the biggest and most comprehensive conservation demonstration project in the country is beginning to hum. Over 3,000 homes will be very well insulated, and 320 of them will be closely monitored for their energy performance.

It is this aspect of the project, the actual energy use changes in households and neighborhoods, that will employ some of the most technically sophisticated equipment available. Three sources of data will be recorded in synchronized 15-minute segments over the next two years. Each of the 320 randomly selected monitored homes will have a four-channel temperature and kilowatt-hours-use tracking device installed in it.

For before and after comparison, these houses will not be insulated until Year II of the project. Throughout Year I the devices will measure the typical energy use of a Hood River County home without weatherization or with only a minimum of existing weatherization in place.

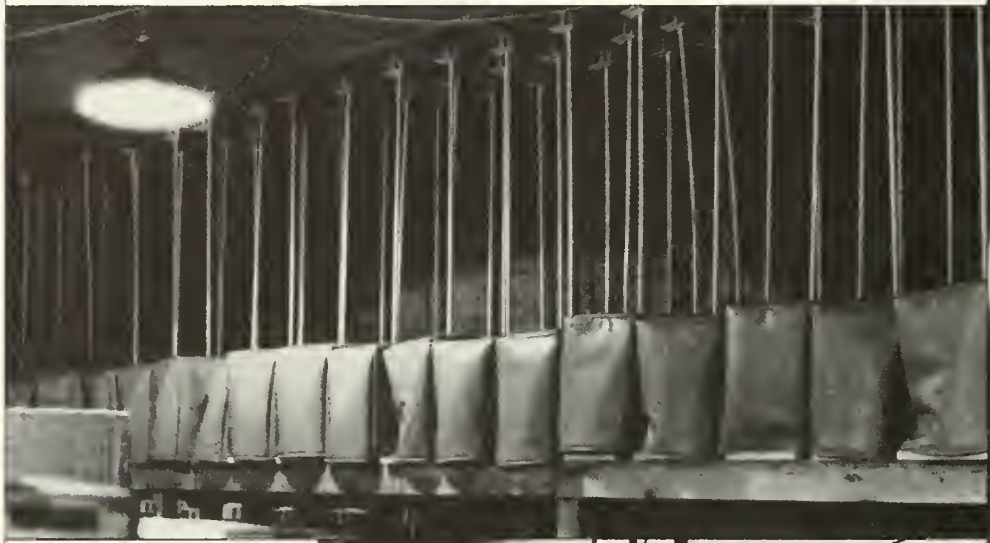
Corresponding to the data from the houses themselves will be weather statistics recorded at three different sites in three different microclimates. The sites have been chosen for their proximity to the houses being monitored and for their ability to reflect very different weather conditions throughout the country. Data collected at these stations will include solar radiation, wind velocity and direction, air and soil temperature and barometric pressure.

In addition to these two bodies of information, load monitoring equipment will be placed on the neighborhood feeder lines that serve clusters of monitored homes. This equipment will, as much as possible, exclude commercial and industrial customers, thus affording the project one of the first clean measurements of conservation's impact on distribution loads.

The theory is if you reduce energy consumption dramatically along a feeder line, you will see a drop in overall energy draw on that line. Terry Oliver, Bonneville's coordinator on the project, described the potential significance of this study.

"What we're doing is taking the change in an individual household load and trying to relate that to change in the requirements for a distribution system. A utility faced with load growth on a distribution system might be required to reconductor a whole system at a pretty high cost, or rebuild it totally, completely reconfigure it. We're hoping we might instead do some serious conservation and have the same

The biggest and most comprehensive conservation demonstration project in the country is beginning to hum.



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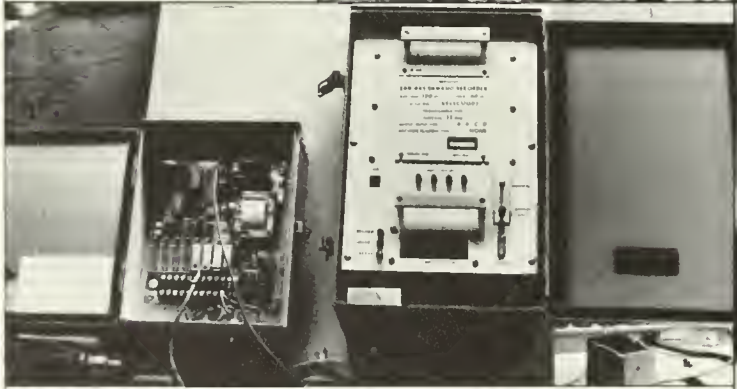
1. "ETs" (electronic temperature monitors) lined up and awaiting deployment.

2. The beauty of the ET is that it can be plugged into an outlet in the home to measure the ambient temperature and transmit that to the receiver.

3. John Shaw, PP&L's meterman in Hood River, assembles and tests the monitoring equipment in his basement workshop.

4



4 Monitoring receiver (left) and recorder. Four devices (transponders) in the home send temperature and energy use data over the household current to the receiver mounted outside the home. The receiver accepts data and transfers it to the recorder where it is stored in the bubble memory

5. The bubble cassette (memory) stores up to 57 days of information. At regular intervals the cassettes are collected and brought to downtown Portland where PP&L staff enter data into their computers for interpretation by the consultants at Oak Ridge, Tennessee.

5

The notion of progressive environmentalists, utility representatives, and BPA all sitting down together as a working team would have boggled anyone's imagination a few years ago. But in Hood River, it's happening.

impact (reduced load on the system) at a reduced cost," he explains.

The overall coordination of these three synchronized sets of data is the responsibility of PP&L's H. Gil Peach and his co-worker Danielle Engels. They are in charge of culling the information and keeping each separate concern on schedule. So far, the size of the project itself is all that has slowed them down.

To carry out the monitoring of the weather data, energy use and feeder line loads in their matched 15-minute cycles from homes and weather stations spread out all over Hood River County, PP&L wanted the most advanced equipment it could get. Several companies proposed prototypes that would be designed specifically for this project, but PP&L wanted to test energy use, *not* monitoring equipment, so beyond just state of the art technology they wanted reliability.

"We're using *proven* state of the art equipment," says Peach. "There is newer equipment out, but we wanted good practical technology that works automatically by itself and is resilient. This stuff will be mounted on the outside of people's homes."

The team decided to use a type of equipment that they had already tested in a smaller project in Albany and Bend, Oregon. The monitoring package incorporates advanced solid state "bubble memory" recorders rather than the more standard recording tapes system. The bubble is much more reliable than the old tapes. If it fails at all, it fails right away not later, like the tapes.

There are no gaps in the data, no slowdowns or speed-ups, because there are no moving parts, and the bubble's capacity is greater for a longer recording period than more conventional technology. The bubble equipment when coupled with the four sensors in the home will be able to separate electric space heat (by degrees and kilowatt-hours) from hot water or wood heat and each of these from the total household load. Moreover, the equipment can be plugged into a home's outlets — no holes need to be drilled for special wiring.

Once collected in the bubble (more like a small cassette) and transferred to a PP&L computer, the information can be compared to the same cycle of weather data and feeder line loads. This will be sent to Oak Ridge National Laboratory in Tennessee for study and interpretation. At Oak Ridge the project will be the responsibility of Dr. Eric Hirst and his staff. They were asked to evaluate the data because they are outside the region, nonbiased, and, according to Peach, "probably the top conservation evaluation team in the country."

For various reasons, all of them relating to the unwieldy size and nature of this project, things are already off schedule. The equipment PP&L is using is manufactured by a small high-tech business called Robbinton Products, Inc., in Sunnyvale, California.

"We placed the largest order their company had had so far," Peach noted. "The order and associated timeline bottlenecked them." To date only about 130 houses are fully hooked up and recording, and the first year's winter is almost over.

In the basement workshop of PP&L's meterman in Hood River, John Shaw, there are rows of electronic temperature monitors (known affectionately as "ET's") and boxes of receivers and recorders being assembled, tested and readied for installation. As each of these comes on line and the body of collected data grows from Year I into Year II, comparisons will be drawn to other communities in the Northwest. If all goes well, there will be enough preliminary data to be useful in the next regional planning process.

Eventually, the many studies going on in Hood River should coalesce into vital information about practical energy economics in our region. The 3,000 snug and sturdy homes scattered up and down the valley between the Columbia and Mount Hood will have answered some of the questions for us.■

THE
HOOD RIVER
CONSERVATION
PROJECT
NATURAL RESOURCES DEFENSE COUNCIL
HOOD RIVER ELECTRIC COOPERATIVE
PACIFIC NORTHWEST UTILITIES CONFERENCE COMMITTEE
BONNEVILLE POWER ADMINISTRATION
NORTHWEST POWER PLANNING COUNCIL
HOOD RIVER CITIZENS ADVISORY COMMITTEE
PACIFIC POWER & LIGHT
NORTHWEST PUBLIC POWER ASSOCIATION

Advisory committees play vital role for Council

When the Northwest Power Planning Council was created in 1980, Congress wanted the people of the Pacific Northwest to be involved in the formation of regional policy. Responding to this wish, the Council has built in several ways to get the people of the Northwest involved and to solicit their opinion.

Advisory committees have always played a large role in this public process. Recently the Council's committee structure was revised to allow parties that are directly concerned with an issue to have more impact on the Council's decisions. The new structure is intended to be fluid, allowing task forces to be created to deal with specific problems and then be dissolved when their work is finished. Together, these committees make up the Scientific and Statistical Advisory Committee.

Members of most advisory committees are selected to represent the various governments, agencies, public interest groups, and Bonneville Power Administration customers that are affected by the issues being examined.

All of the committee meetings are open to anyone who would like to attend, and time is provided for public comment. (Contact the Council's central office to find out when and where meetings are being held.)

Hydropower Assessment Steering Committee

This committee is part of the Council's effort to assess the Northwest's existing and potential hydropower sites and to keep future hydroelectric dams from harming fish and wildlife resources. It will be advising the Council on a study of the cumulative effects of building dams.

Most projects currently under construction are very small and may have no significant effect on fish and wildlife individually. However, the cumulative impact of several of these dams on a river basin may be considerable. The study will develop methods to measure that impact and to incorporate the results into the federal procedures for authorizing new hydroelectric projects. The committee is also involved in a study that will identify streams and wildlife habitats that should be protected from future hydroelectric projects.

Fish Propagation Panel

The Fish Propagation Panel differs from the other committees in that its members were not chosen to represent specific parties in the region but for their special knowledge of fish. The seven members are nationally and internationally known and have a combined total of 160 years of experience in fisheries science.

These experts help the Council coordinate its efforts to improve the propagation of wild, natural and hatchery fish. Natural reproduction maintains strong, genetically resilient fish populations. Hatchery produced fish can supplement dwindling runs of naturally spawning fish but must be carefully integrated with natural production. The Panel is establishing priorities for projects to improve fish populations and is working to improve the effectiveness of hatchery activities in the Northwest states.

Options Steering Committee

Part of the foundation of the Council's Energy Plan is the concept of acquiring options on resources. This concept involves developing a resource, such as a coal plant, in stages with the understanding that at certain key decision points, construction may be accelerated, delayed or cancelled depending upon the region's growth.

This moves the final decision to construct a resource nearer to the time when its power is actually needed, reduces the risk of building a power plant that will not be needed, and increases the flexibility of the Northwest's electricity supply. Despite its advantages, the options concept is new and will require demonstrations and further development before it can be depended upon. More technical information may be needed in an area or conflicting regulations from government agencies may arise. To study and deal with potential problems, a series of task forces has been created, each dealing with a different resource.

The Options Steering Committee is to oversee these individual task forces and coordinate their work when their interest areas overlap. These task forces are Hydropower Options, Coal Options, and Cogeneration Options.

The Options Steering Committee also oversees the Options Evaluation Task Force, which is looking at the value of options and their use in regional power planning. It is concerned with when and under what conditions the Northwest would benefit from beginning the process to develop a new dam, power plant or conservation program.

Industrial Conservation Advisory Committee

When the Council was compiling the energy plan, it discovered the information on the conservation potential of the industries of the Northwest was inadequate. The Council has hired Synergic Resources Corporation (SRC) to conduct a survey of the industrial sector and assess its potential for conserving electricity.

The Industrial Conservation Advisory Committee, composed of people who actually work for industries, is working with SRC to develop the survey and will be helping the Council develop a conservation program that will prove practical and effective for industries.

by Ruth Curtis

Hearings open on Fish and Wildlife

Finetuning of what many consider the most important regional program to save a great natural resource has begun in earnest. The Northwest Power Planning Council will be spending the next few months absorbing public comment on proposed changes in its Columbia River Basin Fish and Wildlife Program.

The process began last August when the Council issued a public announcement that it would be taking applications for amendments to its program. Deadline for the applications was November 15, 1983, the first anniversary of the program. In all, there are 142 amendment proposals.

The Fish and Wildlife Program grew out of Congress' charge to the Council to develop a program to "protect, mitigate, and enhance" the fish and wildlife populations of the Columbia Basin. Those populations had been so seriously depleted in the last half century that it was not overly dramatic to talk of losing a natural resource.

A major reason for this decline had been hydroelectric development and operations in the basin. While there was little disagreement that something had to be done, correcting the problem wasn't easy. A major obstacle was the fact that the rivers and tributaries of the basin run through numerous jurisdictions.

As a regional body, the Council was in a unique position to take up the task of preventing further destruction and of restoring the fish and wildlife. For the first time, a major policy-making body with responsibility for power planning also had responsibility for the impact of that development on fish and wildlife. In another significant move, Congress made the two responsibilities co-equal.

The idea of amendments was an integral part of the developing program from the start. For one thing, the Council had only one year to develop its Fish and Wildlife Program. No one pretended that would be time enough to correct all the problems that had taken decades to develop.

"Because of this, we don't see the amendment process as an expression of dissatisfaction with the program," says Jan Chrisman, the Council's director of fish and wildlife. "We see it as an opportunity to refine and improve what we started. Everyone who helped us develop this program did a monumental job. But all of us also knew our work was just beginning."

The amendment process is important from another standpoint. Like the Council's power plan, the fish and wildlife program was specifically designed to be changed so that it can easily respond to new information and technologies.

Since the amendment applications arrived last November, Chrisman and her staff have been busy sorting and organizing them into compatible subject areas. They are currently preparing issue papers which are available to the public (see order form in this issue).

The issues raised by the amendment proposals run the gamut from who will do the funding to what will be funded and in what order. The area drawing the most proposals deals with improving habitat and passage facilities for anadromous fish. These are fish, such as salmon and steelhead, which are born in fresh water but mature in the ocean, returning only to spawn.

Resident fish, which do not migrate to the ocean, were the number two issue in terms of the number of applications. Some of the amendments in this area addressed perceived potential conflicts in the program between resident and anadromous fish.

The issue papers deal with funding, ocean survival and harvest controls, anadromous fish research, demonstration research projects, capital construction, off-site enhancement for anadromous fish protected areas, resident fish, wildlife, program scheduling, and technical corrections to the program.

Chrisman notes that the amendments have drawn some new interest groups to the program. "In contrast to the original recommendations for program measures, which came primarily from the fish and wildlife agencies and tribes, the amendment proposals were filed by a far more diverse group of applicants," she reports.

The greatest number were filed by the Columbia Basin Fish and Wildlife Council, an association of federal and state fish and wildlife agencies, and by the U.S. Forest Service. Other major contributors include the Oregon Department of Fish and Wildlife, Army Corps of Engineers, and the Nez Perce Tribe.

Other applicants included the Bureau of Land Management, Crown Zellerbach Corporation, Oregon Division of State Lands, fish and wildlife agencies and groups, utilities, Indian tribes, and several individuals.

Throughout this spring there will be opportunity for public comment on the proposed amendments at all Council meetings. The Council plans to have a completed draft of the amendments by June. An open comment period on the draft will be held throughout the summer with public hearings in all four states in the region. During the fall, the Council will discuss the public comments and make a final decision to amend or not to amend any part of the program.

ISSUE PAPERS

COLUMBIA RIVER BASIN FISH & WILDLIFE ISSUE PAPERS ORDER FORM

Please send me a copy of the following staff issue papers related to amendments to the Council's "Fish and Wildlife Program"

☐ 1/FUNDING
☐ 2/OCEAN SURVIVAL/HARVEST CONTROLS
☐ 3/ANADROMOUS FISH RESEARCH
☐ 4/DEMONSTRATION RESEARCH PROJECTS
☐ 5/CAPITAL CONSTRUCTION
☐ 6/OFFSITE ENHANCEMENT (anadromous fish)
7/HATCHERIES (incorporated into other papers)
☐ 8/PROTECTED AREAS
☐ 9/RESIDENT FISH
☐ 10/WILDLIFE
☐ 11/PROGRAM SCHEDULING
☐ 12/TECHNICAL CORRECTIONS

Name ____________________
Organization ____________________
Street Address ____________________
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Northwest Power Planning Council
700 S.W. Taylor, Suite 200
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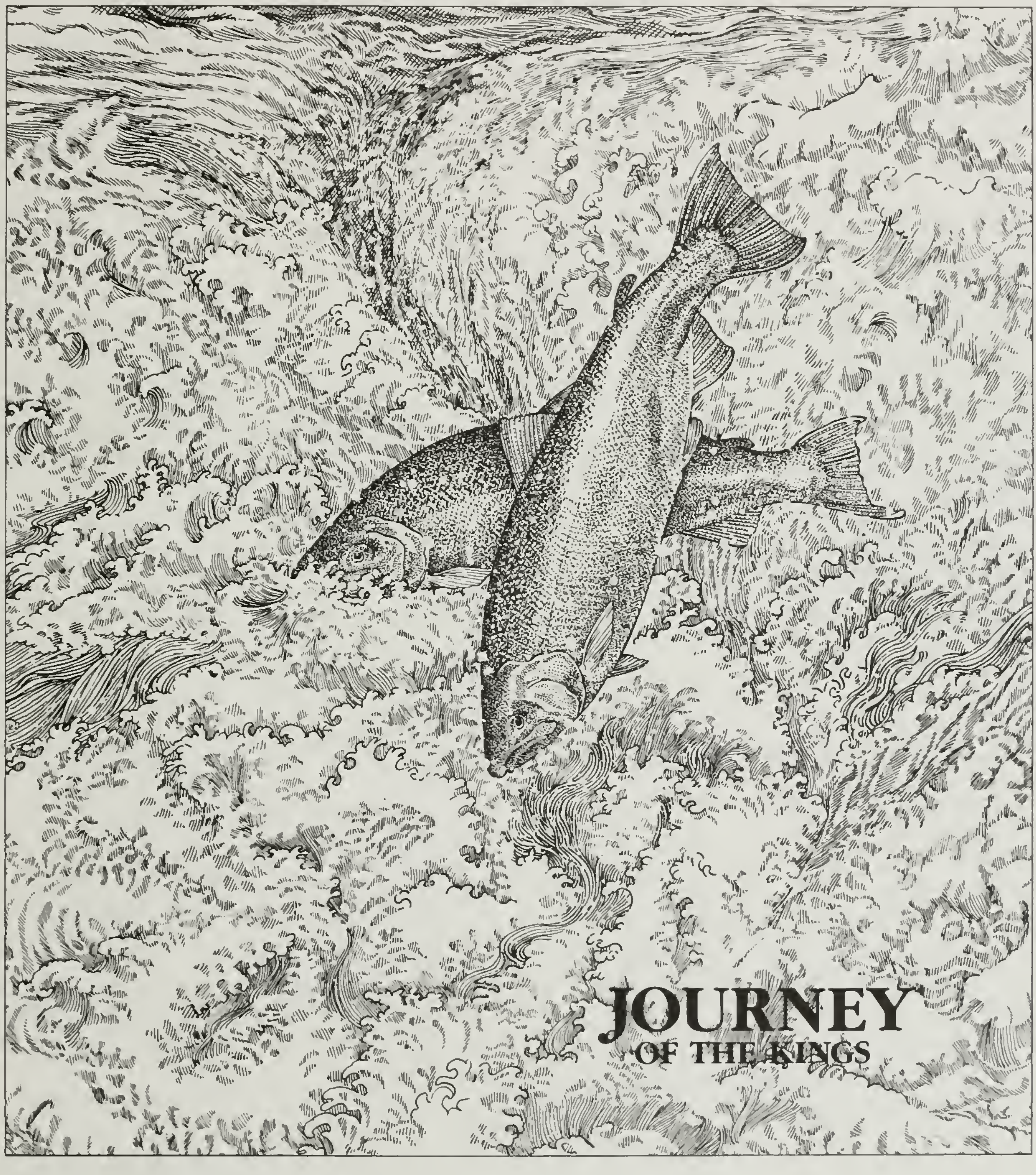

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The Northwest Power Planning Council is required to develop a program to restore the Columbia fisheries and a regional electric energy plan, to be carried out by the Bonneville Power Administration, emphasizing cost-effective conservation and renewable resources

Editor: Dulcy Mahar
Graphic Design: Linda Sawaya

EDITOR'S NOTES

Fish and wildlife are — appropriately — the focus of this issue of *Energy News*. I say appropriately because two important events are going on. First, the Northwest Power Planning Council is in the midst of reviewing proposed amendments to its fish and wildlife program. This issue carries both a synopsis of the amendment issues as well as instructions for public comment, both written and oral.

The second event is the release of the Council's new film, *Journey of the Kings*. The 26-minute film was the brainchild of Idaho Council Member Larry Mills, a man who, according to legend, once said, "I've seen a lot of fish, but I've never seen a kilowatt!"

In this issue we are also beginning a series of interviews with key energy and fish and wildlife people in the region. The interviews are "conversations," and do not necessarily represent the viewpoints of the Council.

With all the emphasis on fish and wildlife issues, energy issues aren't overlooked. This issue includes an analysis of the utility "death spiral" theory (can it happen here?), a look at the controversy over the intertie access, and an update on homes built to the model conservation standards.

Last, and certainly not least, the Council's information coordinator Ruth Curtis has compiled a practical list of where to go in the region for more information about energy and fish and wildlife issues.

I'd like to especially thank contributing artist Sharon Torvik of the Oregon State Department of Fish and Wildlife for the loan of excellent drawings used on the cover and inside this issue. Thanks also to two alert readers who deduced that the nuclear plant mentioned in the last issue is at Marble Hill, Indiana, not Marble Head. — DM

Cover illustration by Sharon Torvik, courtesy Oregon State Department of Fish and Wildlife.

CALENDAR

May 15-17 — Northwest Power Planning Council meeting in Helena, Montana.

May 31, June 1 — Northwest Public Power Association annual meeting in Victoria, British Columbia.

June 5-9 — American Solar Energy Society annual meeting and solar technology conference in Anaheim, California.

June 11-13 — American Water Resources Association symposium on "A Critical Assessment of Forecasting in Western Water Resources Management." Sheraton Hotel, Seattle, Washington. Contact Gary Minton, (206) 282-1681.

June 27-28 — Northwest Power Planning Council meeting in Pocatello, Idaho.

June 29 — Draft of Northwest Power Planning Council's Fish and Wildlife Program amendments is published.

July 16 — Public hearing on Northwest Power Planning Council's Fish and Wildlife Program amendments in Boise, Idaho.

July 18-19 — Northwest Power Planning Council meeting in Spokane, Washington.

July 19 — Public hearing on Northwest Power Planning Council's Fish and Wildlife Program amendments in Spokane, Washington.

July 24 — Public hearing on Northwest Power Planning Council's Fish and Wildlife Program amendments in Missoula, Montana.

July 24-25 — Northwest Public Power Association Rates Symposium in Missoula, Montana.

July 26 — Public hearing on Northwest Power Planning Council's Fish and Wildlife Program amendments in Portland, Oregon.

August 8-9 — Northwest Power Planning Council meeting in Kalispell, Montana.

August 10 — Comment period on Fish and Wildlife Program amendments closes.

August 23-25 — Energy '84 in Honolulu, Hawaii. Sponsored by the American Society of Civil Engineers — Energy Division. Contact Dr. Pat Takahashi, Dept. of Civil Engineering, University of Hawaii, Honolulu, Hawaii, 96822, (808) 948-7658.

September 14-15 — Solar '84 in Portland, Oregon. Sponsored by the Solar Energy Association of Oregon.

Compiled by Ruth Curtis

IN THE NEWS

Bonneville's breakthough breaker

It's called a "major breakthrough" and predicted to have "an almost revolutionary impact on transmission systems throughout the world," according to the Bonneville Power Administration.

All the excitement is over the world's first high-voltage, direct-current (HVDC) circuit breaker just developed by the agency's engineers. The new breaker, a 25-foot tall "giant switch," can interrupt the flow of power on a high-capacity direct-current transmission line, something no previous breaker could do.

This will allow the operation of long-distance, multi-terminal direct-current transmission lines or networks. When the Northwest-Southwest Intertie was built, branches to the main line were impractical because there were no breakers to isolate the faults on branch lines. The HVDC corrects this problem and could allow branch lines to such places as San Francisco, Salt Lake City, and Phoenix. (See photo on page 21)

Roundtabling conservation around the region

Representatives of the region's utilities, local governments, industries and environmental organizations got an opportunity to inject their ideas into BPA's conservation planning process in a series of "roundtable" discussions sponsored by the agency this spring. The meetings were held in Spokane, Missoula, Boise, Seattle and Portland to gather public comments primarily on how the region's energy conservation potential should be tapped and how these efforts should be paid for.

Steve Hickok, BPA assistant administrator and conservation manager, said Bonneville "was encouraged by the positive, forward-looking tone of most of the participants" in the discussions.

Hickok said BPA tried to set the stage for the meetings by sending the message that "there are several actors whose actions are critical to attaining the goals" of the Council's electrical energy and conservation plan. Despite the fact that the region's private utilities and a large share of the public utilities rejected long-term conservation contracts offered by the agency last fall, BPA still hopes it can team up with the region's energy agencies and utilities to meet the requirements of the Council's plan.

The roles BPA could assume in developing the available energy conservation range from only meeting the needs of its own customers to being the "conservation czar" for the entire region, regardless of contracts and utility service territories, according to an issue paper developed by BPA for the sessions.

BPA's role was perceived by the roundtable participants as somewhere in the middle of that spectrum, Hickok said. They perceived that some coordination of conservation efforts is still necessary, he explained.

All of the private utility representatives also expressed a desire for BPA to share the cost of research and development and conservation capability programs, he added.

"BPA is still viewed as a catalyst, but it's not the only actor on the conservation stage," Hickok said. "This certainly has to be a hand-in-hand approach."

According to Hickok, BPA will be deciding in the near future if and when the long-term conservation contract will be again offered to those utilities who declined to sign the agreement last year.—SS

WPPSS 2 by any other name

The Washington Public Power Supply System's Richland, Washington plant — known as WPPSS 2 — has received permission to go to full power from the Nuclear Regulatory Commission.

The 1,100-megawatt plant is expected to reach capacity sometime in July and will, according to industry observers, double the regional surplus of electricity that could be sold to California. Regional forecasts predict the plant's energy won't be needed within the region for a decade.

Meanwhile, plant officials are working to come up with a name for the plant, perhaps to remove the taint of adverse publicity associated with the term "WPPSS." So far, the nominees are Columbia, White Bluff (reflecting a geographical feature of the area), and Chief Joseph, a leader of the Nez Perce tribe in the 1800s.

No contest over Council amendment

The Northwest Power Planning Council has adopted a noncontroversial amendment to its power plan. The staff-proposed amendment deals with action 23.1 of the two-year action plan and deletes a Council study of large thermal plant planning and construction schedules.

The study will be replaced with a provision allowing the Council to assess the results of ongoing utility studies before making a decision to conduct its own study. The amendment, which complied with all requirements for public comment, received no opposition.

Further information about the amendment is available by writing to the Council's Public Information office. See central office address on the inside front cover.

Brokering power for the Northwest

The Bonneville Power Administration will act as the agent for Northwest utilities which request assistance in selling long-term, surplus power to California.

The agency is taking on the job at the request of the Pacific Northwest Utilities Conference Committee (PNUCC), according to Bonneville Administrator Peter Johnson.

"Our objective will be to conclude sales beneficial to BPA, the utilities, and to the region as a whole," he said. Johnson also said Bonneville will consult with the Northwest Power Planning Council to assure that sales to California are consistent with the regional power plan.

Thus far, the agency has received 27 responses to its offer to act as a marketing agent. The offers could provide for the sale of 600 to 1,000 average megawatts over the next 15 years.

FISH AND WILDLIFE HEARING DATES

Public hearings on proposed Fish and Wildlife Program amendments will be held in individual states on the following dates at 9 a.m. Specific locations will be announced.

Boise, Idaho — Monday, July 16
Spokane, Washington — Thursday, July 19
Missoula, Montana — Tuesday, July 24
Portland, Oregon — Thursday, July 26

Information about presenting both oral and written testimony on the proposed amendments is on the back cover of this issue. A synopsis of the issues raised in the amendments also appears in this issue for your convenience on pages 22-25.

MONTANA

WELCOMING BACK WILDLIFE

Libby Dam

U.S. Army Corps of Engineers photo

by Carlotta Collette

Ninety-mile long Lake Koocanusa used to be a river.

It came down from the west slope of the Continental Divide, made a big sweep from near Banff in British Columbia, through northwestern Montana, cut across a corner of Idaho and poured back into Canada. It was the Kootenai, still is, except for those 90 miles that are now a lake. In the process of building the Libby Dam that made Lake Koocanusa (the name comes from Kootenai, Canada and USA), 46,500 acres of wildlife habitat were inundated.

Just east and a little south of Lake Koocanusa is the Hungry Horse Reservoir on the South Fork of the Flathead River. The South Fork runs almost parallel to the Continental Divide and Glacier National Park. Hungry Horse is 35 miles long and covers up nearly 24,000 acres.

On the lower Clark Fork River at the Idaho border there are three reservoirs that butt up against each other forming a 70-mile long stretch of regulated water that eventually enters Lake Pend Oreille. A total of 21 square miles of aquatic and riparian* habitat were transformed when the Clark Fork was impounded by the dams.

It's hard to say just what kind of wildlife inhabited these areas. Thompson Falls Dam, on the Clark Fork, was built in 1916. Not too much evidence of the old habitats from that period remains. What was gained in building the dams is obvious. What was lost still needs to be quantified.

The Montana Department of Fish, Wildlife and Parks (MDFWP) saw the Northwest Regional Power Act as an opportunity to study this question. As each of the hydroelectric facilities in their portion of the Columbia River Basin was built, some mitigation of the damages to existing wildlife was attempted, but few people would argue that any of these efforts was adequate. The problem goes back to determining how many animals of which species were actually killed or displaced by the dams. This is what's known as a "loss statement."

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*Riparian refers to land along a river or lake shore.

Loss statements that describe pre-dam ecosystems may need to be developed for each area where improvement (as called for in the Council's Fish and Wildlife Program) will be undertaken. Northwestern Montana is ahead of other parts of the region in this. MDFWP has completed its loss statements for the three major restoration projects underway in that state. These are the areas of Lake Koocanusa, Hungry Horse Reservoir and the three dams and reservoirs on the lower Clark Fork above Lake Pend Oreille — Thompson Falls, Noxon Rapids and Cabinet Gorge.

Thompson Falls Dam is the oldest of these and provides a good example of the work involved in pursuing the history of an inundated environment. To make their analysis of the pre-dam habitats and populations at Thompson Falls, Montana's wildlife biologists and researchers had to dig through files of information that dated back to 1809.

Arnie Olsen, MDFWP's project coordinator, was surprised at the quantity and quality of literature available. "We came up with an average of 100 references for each of our projects."

In addition, they interviewed long-time residents of the area, retired fish and wildlife personnel and local biologists.

There were very few photographs of the Clark Fork River dating from before Thompson Falls Dam, but a few US Forest Service file photos taken in 1909 exist. "The intent," adds Olsen, "is to look at these old photographs and determine what kind of general habitat types were there prior to the dam construction." From these it was concluded that all or most of the 500 acres flooded by this first dam had been covered with Douglas fir, ponderosa and lodgepole pines, some deciduous trees and numerous shrubs. There were several islands in the river, and stretches of meadow opening in the forest. At least part of the riparian strip had been homesteaded and farmed. A US Geological survey completed in 1911 helped draw more specific habitats.

For all of the areas inundated by the dams, categories of habitats were established. These included aquatic habitats, grasslands, gravel bars (usually at water's edges and regularly flooded by high stream flows), various riparian habitats and other landscape types further from the actual water. A separate category covers developed areas such as towns and farms.

Wildlife to be studied were also targeted by the Department. It limited work primarily to species that appeared to have been most severely hurt by the dams, those considered endangered and those that are prized as game. The Department assumed efforts to re-establish these would also benefit other species which share the habitats.

Lands adjacent to natural rivers and lakes tend to attract and support complex ecosystems. Creatures who either live in these ecosystems or migrate through them do so for precise reasons. They interact in specific patterns with other parts of that ecosystem. The interaction is dynamic, due, in part, to the fertility of both the land and the water, and stable or homeostatic in that there is generally an evolved balance of prey and predator.

The dams disrupted this balance. Species such as white-tailed deer, elk, grizzly and black bears lost the nutritious forage or den sites along the river banks. Predators such as mountain lions and bobcats were deprived of their prey base of smaller mammals and birds. River otters seem to have been entirely eliminated from the vicinity of the reservoirs and beaver populations, without their denning sites, declined dramatically.

Nests for ruffed grouse, bald eagles and other waterfowl were lost when 14 islands in that 70 mile stretch of the Clark Fork were covered with water.

The only species showing measurable net improvement after the river was regulated was the osprey. But biologists tend to attribute the increase in osprey nests to the ban on DDT rather than any particular benefit of reservoir creation.

In studying each of the affected species, the MDFWP calculated the degree of impact as high, moderate or low and used these criteria for establishing mitigation goals.

At Thompson Falls Dam, where only 500 acres were flooded, there were in general only "moderate" impacts on the surrounding ecosystems. But, when the added inundation created by Cabinet Gorge Dam (2,700 acres) and Noxon Rapids Dam (6,000 acres) is included in the evaluation, impacts on several species become "high."

The white-tailed deer is one of these species. The earliest historical reference to the white-tailed deer in the lower Clark Fork Valley appears in the records of David Thompson, who in 1809 established the Salish House, a trading post near the present town of Thompson Falls.

It is recorded that Thompson and his crew survived on 145 deer during their first winter at the site. A letter from Thompson Falls resident dated January 19, 1890, suggests that the deer survived Thompson and his crew. "There is an abundance of all kinds of game here," notes the letter. "Deer, prairie chickens, grouse, ducks, mountain sheep, mountain goats, elk . . . etc."

A forest fire in 1910 burned about 60 percent of the Cabinet Gorge Forest which surrounds the lower Clark Fork River. White-tailed deer numbers were affected by the loss of wintering grounds there. Thompson Falls Dam construction begun

Montana Department of Fish, Wildlife and Parks photo

In all, 1,475 white-tailed deer and the habitats they relied on were lost to the three dams.

three years later did not improve the situation.

Nonetheless, the white-tailed deer seemed to re-establish themselves in the area of the dam, surviving in large numbers until the second and third dams were built in the '50s. In fact, white-tailed deer populations peaked at just about the same time as Noxon Rapids and Cabinet Gorge Dams were in construction. This larger population at the river increased the destructive impact of the flooding.

There were as many as 2,200 deer on the lower Clark Fork before the dams. More than half of these are assumed to have moved to other habitats when the dams were built. These adjacent habitats also carried peak populations of deer and were likely to have been close to their limit for supporting them. The additional deer were certain to cause an unbalancing in these new areas.

Replacement habitats and new shorelines are also inferior to the original land lost to the floods. The new shorelines are unstable due to the drawdown on the dams, and neither vegetation nor wildlife can become established there.

But, the dams had another overall effect that decimated remaining deer populations. The old Clark Fork rarely, if ever, froze over during the winter. Long-time residents recalled seeing deer swimming the river to cross to other forage areas. The reservoirs slowed the river causing it to freeze during the winter. Deer attempting to cross now frequently break through the ice and drown.

Washington Department of Game photo

In all, 1,475 white-tailed deer and the habitats that they relied on were lost to the three dams. But because of the age of Thompson Falls Dam and the scarcity of detailed records from that time, these numbers are still rough guesses. "We had to generalize," says Olsen. "Rarely did we have real data from the actual sites. We had to infer from surrounding areas. We had to choose between spending all of our time and money on the loss statements themselves, or draw some conclusions from the best data we had and proceed to the actual work of mitigation."

The real work is about to begin. The work of making up for the damage caused by the dams will be in what are being called "mitigation packages." Olsen explains why. "Once you do anything in nature there are multiple reactions. We know that if we do something for say, mule deer, we would probably benefit some of the predators like mountain lion."

So each effort taken will be looked at to see how other species also will be enhanced. Nothing can fully restore everything that was lost. It's just not possible. Too much was lost, too long ago. The presence of the dams and reservoirs where there were once wild rivers is a fact of life for northwestern Montana and the rest of the region. Still, much can be done thanks to the "protection, mitigation and enhancement" called for in the Fish and Wildlife Program of the Power Planning Council.

Most mitigation efforts in Montana will be begun this summer and in the fall. We will follow this article with one that looks at that work in progress.■

LAST CHANCE
at LIBBY DAM

by Carlotta Collette

On the east facing cliffs overlooking Lake Koocanusa there lives one of the few remaining herds of bighorn sheep (Ural-tweed) in northwestern Montana. Before Libby Dam was built flooding 4,350 acres of crucial winter/spring forage grounds, there were between 150 and 200 sheep in the herd. Now there are approximately 25.

It wasn't only Libby that caused the catastrophic drop in the population. Frequent forest fires used to keep the bighorn ranges open and grasses abundant. The prevention of forest fires allowed the Douglas firs to take over, closing out the preferred grazing habitat of the sheep. But, Libby's effect was even more formidable.

Two things happened because of the dam that were critical in the survival of the herd. Pregnant ewes relied on the early greening of grasses along the Kootenai to restore them after their winter of dormant vegetation. They needed the high protein fresh forage for lactation. When the forage grounds were inundated, the mortality rate of lambs rose.

In addition, highway 37 was moved from the west side of the river to the east. The new highway cuts directly across the bighorn sheep range known as Allen Gulch, the sheep's preferred lambing ground. The highway created an island habitat between Lake Koocanusa and the road. Sheep attempting to reach that "island" can climb down the sheer cliffs blasted through the mountainside to create the road, but they are trapped when they attempt to return to the higher ranges. Trapped sheep trying to find a foothold are frequently killed by passing vehicles.

The Montana Department of Fish, Wildlife and Parks will begin herd preservation efforts this fall. There are plans to blast terraces into the cliffs along new highway 37 that will allow the sheep to climb back off the highway in the event they become trapped there. To reduce the number of sheep crossing the roadway, fences and new passages will be installed that will route the sheep along safer paths under the highway. Hopefully, with such mitigation in place, the herd will become re-established as a wild resource for the Northwest.■

Illustration by Sharon Torvik, courtesy of Oregon Dept. of Fish and Wildlife/Montana Dept. of Fish, Wildlife and Parks photo

Illustration by Frank Farah

DEBUNKING THE DEATH SPIRAL

by Terry H. Morlan

The "death spiral" is highly unlikely to occur in the Pacific Northwest, according to an analysis by the Northwest Power Planning Council. The ominous sounding death spiral is the more dramatic name for a phenomenon sometimes also called the "spiral of impossibility." The concept was first applied to the utility industry by Amory Lovins in 1980. Since then, more and more utilities throughout the country have paid it serious attention as they make the difficult transition from the previous rapid growth of demand and decreasing costs to a new era of harsher realities.

Very basically, the death spiral theory is based on an assumption that a utility's cash flow is inherently unstable. This instability is believed to result from the relationship among utility costs, electric prices, and demand for electricity.

According to the theory, rising utility costs can trigger an increase in rates so that a utility can recover the additional revenue needed to cover the higher costs. However, the increase in rates can depress sales so that the expected revenue increase is not realized. When this happens, further rate increases are needed, causing further sales reductions, and so on — resulting presumably in an endless spiral.

In the extreme case, according to the theory, the spiral could lead to the "death" of the utility because there would be no price that would allow the utility to recover its costs.

In the Northwest, concern about such a phenomenon has been spurred by the impact of WPPSS nuclear plant costs on regional utilities and the Bonneville Power Administration. Could such a thing happen in this region? How serious is the potential? To answer these questions, the Council's forecasting staff has recently completed a computer simulation to see if the spiral could be triggered in the region and, if so, what the likelihood would be.

While current statistical surveys of short-run price elasticity indicate the possibilities of the death spiral are remote, the Northwest faces some unique problems which could complicate the picture. In addition to the WPPSS costs, these include the possibilities of direct service industry shutdowns or out-of-region displacement of Bonneville loads.

To the extent such events are allowed to occur, Bonneville could face much larger, short-run sales decreases and financial problems. However, the direct service industry shutdowns would be limited to the amount of their demand in the region.

With these and other regional factors in mind, the Council's staff used its demand analysis system to test if an extreme situation could trigger the death spiral in this region. The analysis simulated the effect of a cumulative demand collapse on electricity prices. The extreme situation was not an anticipated economic projection but simply a "worst possible" scenario to see if the death spiral was even a possibility.

(Several assumptions were made in the simulation and these are outlined in an issue paper on the death spiral available by writing to the Council.)

The simulation showed real electric rates increasing by .24 cents per kwh (in 1980 prices) or by about 10 percent. Thus, the rate impact appeared less severe than the economic dislocations that caused it. For one thing, the price increases resulting from loss of sales were partially offset by cost savings. Without these savings, prices would have increased by about 22 percent.

Cost savings of about 9 percent were achieved in the simulation by backing down additional thermal generation and by selling more surplus firm power to California. For, although the Northwest's electric power system is characterized by high fixed costs, the region benefits from a supply of low-cost secondary power which can generate revenues through export.

These additional revenues decrease the revenues that must be raised through rates within the region under most water conditions. In effect, while the Northwest has some unique problems, it also has a unique (if partial) cushion against the death spiral.

In general, the computer analysis showed short-run price elasticities would not be large enough to trigger a death spiral although there are some risks of large, one-time downward adjustments to demand. These could lead to substantial price increases in the short run. In the long run, financial crises can be minimized or eliminated by using modern planning techniques such as those advocated in the Council's power plan.

This ability to plan flexibly is particularly significant when considering the potential for the death spiral. The theory of the spiral virtually assumes that utilities are helpless in the face of potential financial crisis and would stand by passively. This is highly unlikely.

In the long-term planning stage, all costs of new resources are variable, and there are a host of strategic planning practices that can mitigate the possibility of a death spiral crisis. Many current utility financial problems result from past planning during a prolonged period of declining prices and rapid growth of demand.

The new realities of the utility business are causing many utilities to adopt new planning procedures which take uncertainty, the need for flexibility, and likely demand response into account. These changing utility planning methods make future financial crises of the magnitude we have experienced recently highly unlikely.■

Morlan is manager of demand forecasting for the Northwest Power Planning Council. His issue paper on the death spiral which gives a much fuller analysis of the theory, including management practices which could avert the spiral and assumptions made in the Council's simulation, is available from the Council's central office. See address inside front cover.

Understanding the Death Spiral

To understand the concept of the death spiral more fully, four basic assumptions must be used. First, a utility must recover its costs through its revenues. Second, revenues are equal to sales of electricity times its price. Third, sales are inversely related to price. For example, an increase in price will decrease sales. And fourth, the variable costs of electricity generation are directly related to sales.

Based on only the first two assumptions, a 10 percent increase in costs could be recovered by a 10 percent increase in price. But when you introduce the third assumption (prices go up/sales go down), the revenue increase will fall short of the 10 percent because sales are depressed. How far short revenues will fall depends upon how strongly price affects sales.

The strength of the price effect on sales is described as "elasticity of demand." Elasticity measures the percent change in sales that results from a small percent increase in price. For example, an elasticity of -1.0 would mean that a one percent price increase would reduce sales by one percent. The greater the elasticity, the larger is the impact on sales.

However, the fourth assumption (variable costs of generation) could stabilize utility finances. In as much as reduced generation means lower costs, lower sales could be paralleled by lower costs. This would reduce the need for increased revenues. The problem, however, is that the utility industry in general is characterized by high fixed costs and low variable costs.

In the long run, the problem becomes one of chronic overcapacity. The scenario starts when utilities plan future capacity needs based on current prices and projected economic growth. But as new capacity is completed and its costs are reflected in higher rates, the result is a drop in sales. This eliminates some or all of the need for the increased capacity. As fixed costs for the new plant are spread over fewer sales, the revenue that must be recovered from each unit of power sold is further increased.

JOURNEY OF THE KINGS

Silvered salmon arcing above shimmering water in a slippery ballet . . . swooping, soaring eagles pirouetting against emerald treetops . . . majestic elk bearing many-branched crowns motionless as dancers caught on point.

The backdrop for this lush dance of life is the Columbia River Basin in a remarkable new 30-minute film produced by the Northwest Power Planning Council. The *Journey of the Kings* is the story of the Council's efforts to sustain and nurture

Echo Film Productions photos

that "dance of life" through an equally remarkable program.

At the beginning of this century, the film tells us, the salmon and steelhead populations of the basin numbered in the tens of millions. At the beginning of the last decade, that population could be counted in the thousands. Much of the loss of these resources, as well as resident fish and wildlife, was a direct result of hydroelectric development and operations in the basin.

Not only did the dams form obstacle courses which dramatically decreased survival chances of migrating fish, but development associated with those dams robbed the basin of thousands of square miles of natural habitat for resident fish and wildlife.

When the U.S. Congress established the Council in 1980 to forecast and plan the region's electrical energy needs, it gave the Council another charge of equal weight . . . to "protect, mitigate and enhance" the fish and wildlife affected by hydroelectric development and operations within the basin.

The Fish and Wildlife Program that grew out of that charge was adopted in November 1982. The *Journey of the Kings* is the story of the myriad ways that program is being put to work within the basin.

The Council's program serves as the vehicle for many entities to come together to develop a workable plan to save and restore a great natural resource. Many were involved — several are highlighted in the film — including the basin's Indian tribes, fish and wildlife agencies, Bonneville Power Administration, utilities, Army Corps of Engineers, conservation groups, and the Bureau of Reclamation.

> *"I think if there's any one thing that the Council has accomplished through the development of the Fish and Wildlife Program, it's a sense of cooperation by all the players. They have been willing to alter their traditional likes and dislikes in order to benefit the resource." –Keith Colbo, Council chairman.*
>
> *Excerpt from the* Journey of the Kings.

The film strives to match educational value with extraordinary artistic beauty. It is helped in this by the set — the basin itself. Sweeping aerial shots pan over some of the world's most spectacular real estate. The cameras range from the iron lacery of the Astoria bridge at the mouth of the Columbia and glide up the Columbia and its tributaries as they spread like mercury veins into the interior. The scenery reaches a crescendo in the lofty ranges of Montana.

The film is also helped by its lead actors, and, in this case, humans are a mere supporting cast. Central casting has pulled out all stops supplying the nobility, strength, and grace of bighorn sheep, elk, and white-tail deer in the basin's upper reaches. Smaller, nibbling, darting, furry creatures supply momentary cameos.

But the real stars are the salmon, the kings of the title. Their journey from the sea begins with spectacular slow-motion shots as the fish slice the water's surface like skimming U-boats. The cameras follow as the mighty fish surge upstream to ancestral spawning grounds driven by primeval instinct.

In the beginning, the salmon are clean and fat and strong with silvered scales intact, shiny bright armored warriors setting off to the crusades.

As they struggle upriver battling both manmade and natural obstacles, they swiftly lose their sheen, but not their drive. Gouged, slashed, scales ripped away, they continue their rush forward to life (to spawn) and to death (they die after spawning).

Their depleted numbers are testimony that this struggle is not an exaggeration. But the film tells a parallel story — the story of the region's fish and wildlife program and how it is beginning to ease this journey of kings.

We hear how water can be budgeted through the dams during critical periods to mimic natural freshets and speed the young fish along to the ocean. We see stream-bank projects where work is being done to dredge excess silt. We visit reclamation projects such as the vast Yakima Basin where new state-of-the-art fish passage facilities will be installed.

We learn how the fish agencies are tagging smolt so that biologists and other researchers can learn more about the journey and what they can do to improve survival. We get a firsthand look at the various ways the fish are helped around the dams, from fish ladders to barges through the locks.

Even these efforts may not be enough, and hatcheries may be needed to supplement natural stocks. Certainly one of the most memorable sights in the film is that of hundreds of hatchlings leaping in quick-step, ballet-like motion out of their ponds.

With a 30-minute limit, the film can touch on only a few of the projects currently going on or planned in the basin to save fish and wildlife. It does however, give an overview of the scope of the fish and wildlife program and of the unprecedented cooperation among utilities and environmentalists, agencies and tribes, sportsmen and scientists.

The *Journey of the Kings* tells the story of what may well be the largest regional project to reclaim a natural resource going on in this country today.

> *"It's something that my grandchildren will see, hopefully . . . the salmon in the river." –June Morse, fishery worker.*
>
> *Excerpt from the* Journey of the Kings. ■

Editor's note: To check out the film, contact your state Council office or Chris Larson at the central office. Addresses inside front cover.

Brigadier General James W. van Loben Sels is the commander and division engineer for the North Pacific Division of the United States Army Corps of Engineers. He is from Northern California where his family was involved in agriculture and water issues. That interest was passed on to the General.

He is a graduate of West Point, the Air Force Institute of Technology, the Army Command and General Staff College and the Army War College. He has had civil works assignments in West Germany, Norfolk, Virginia, and Fort Hood, Texas, before coming to the Northwest in July 1981. He has also served two tours of duty in Vietnam.

The General describes the Corps as being in the business of "mobility, counter mobility and survivability." In times of war, it creates mobility – bridges, roads, airports, etc., for its army, while blowing up the opposing army's bridges, roads and airports.

In times of peace, the Corps is usually thought of in terms of moving water. In the Pacific Northwest a primary responsibility of the Corps is the "mobility, counter mobility and survivability" of anadromous fish.

A Conversation WITH THE GENERAL

Photos by Carlotta Collette

by Carlotta Collette

How does the Council and its Fish and Wildlife program fit in with the Army Corps of Engineers' role in the Northwest?

I arrived here just as the Council was getting organized. I looked at it as a great opportunity for the region to look at its needs in fish, wildlife and power on a regional basis and do some balancing between those purposes.

We've been attempting to do some of that ourselves, however imperfectly, but attempting to do that for all the purposes we serve — flood control, recreation, power, fish and wildlife. The local entities, utilities and individual states were not totally successful in getting a regional consensus.

I think that's one of the reasons behind the (Northwest Power) Act. The way it was written was to provide a vehicle to develop a regional consensus, a *public* consensus. It's an experiment in politics, and it really is unique. A federally established council but *not* a *federal* council . . . independent.

There are federal entities more or less responsive to the Council — at least taking into account the Council's views — it varies with the agency you're at and their interpretation of what they think the law says. But nevertheless, I saw it as good. I told the Council, "Welcome to the forum!"

It's a very difficult task, balancing the needs, trying to perceive what the public interest is. Is it the need for more power at the expense of anything? And, how much do we pay for fish and wildlife mitigation?

Are there major problems remaining?

Well we haven't solved all the problems, of course. If it were easy there wouldn't be a need for this. Things would have been decided before. But I think the Council, particularly in its public involvement program — in being able to bring a number of players to the table, the agencies, the states, the Indian tribes, the utilities, Bonneville Power and ourselves — is forcing us to sit around the same table and decide.

Now there may be some who are impatient with our progress, but I'm not. I think the progress has been significant. We have an energy demand forecast, and BPA and the utilities' forecasts are now closing in on the Council's.

The water budget wouldn't have happened without the Council.

I'm glad you brought up the water budget. Is it that new an idea?

No, but the way it's done is a new idea. The idea of providing adequate flows for fish in the summer has been around for some time. The Corps, BPA, the tribes and the various fisheries had been discussing provision of flows. We had been providing (within available water) flows for fish.

What had not been done is the explicit trade-off of so much firm power for those flows. The agencies and the tribes had established what they called "minimum flows" and "optimum flows" for several seasons. These were based on some studies — not as rigorously scientific as I'd like — but it's the best data we have.

I guess maybe the Council's step forward was to go ahead and commit those resources based on the best scientific data available, rather than on scientific proof.

Is there "scientific proof" on this question?

Well, it depends on whom you ask. You can get many opinions from scientists. There are many scientists who read the numbers and believe that there's adequate evidence that providing flows during the period of migration will help, and I agree.

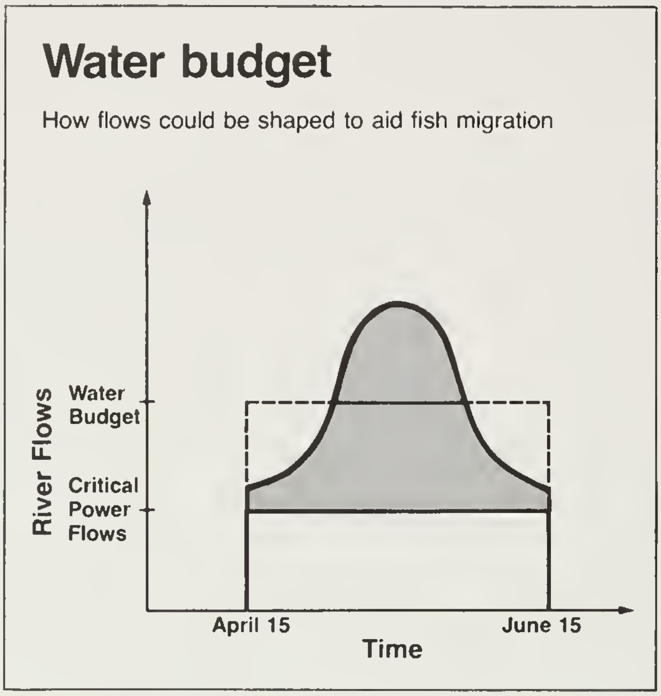
The biological process of the fish moving down the stream means that they need to get to the ocean in a reasonable length of time. The fact that the dams exist has changed the environment such that they don't do that as well as if they came down naturally.

The hard question is, how much is enough? Where's the margin? Is it this amount of water this length of time, or is it more? And if I give you that more, and it costs that much in dollars, or in hydroelectric power, or in just the ability to turn the lights on at a given time so we don't have rationing or a period of deficit, and it only helps the fish get there a day sooner, what is the survival improvement? That's one of the pieces that's missing. That has to be proven.

We tend to think transportation is the solution. That is, collect the fish, put them in a transportation mode, get them around the dams. It works very nicely for steelhead. It works only marginally well for salmon, so we think we ought to work to improve transportation to make it work for salmon.

The agencies and tribes disagree. They think we can work on transportation, but the resource is too valuable to put all our eggs in one basket. So that dialogue continues. If there were a clear-cut answer, then we would do *that*.

I've got some good fish biologists on



my staff, too. They believe what they're doing is right. They're not "power guys," they're not "dam builders," they're top-notch people who happen to have a professional disagreement.

In 1983, when we tested the water budget, there was a record salmon return . . .

But you can't attribute that to the water budget. We practiced the water budget, but it was mostly an accounting test. The water budget only gets hard in dry years. This wasn't a dry year. This has been really a luxury, an opportunity to learn how to do a water budget during a good year.

It's also been a year of surplus energy. If we were to try to make these decisions in a year of power deficit it would be much more difficult. We have not finished agreements on the water budget yet. We have an agreement to help with it this year.

Do you see it as a year-to-year process then?

Yes, in the beginning, because there's an evolution in how we account for the water budget. On the power side there are still ongoing negotiations in how we plan and account for the trade-off of firm power to the water budget.

It's not a simple matter. It's not just saying that we're going to trade so many megawatts of firm power for the water budget, because how you do that, how you trade it in — the multitude of dams, the utilities, the planning period being three years long, etc. — those are the things we still need to work on.

We've talked about the trade-off between power and fish. What's the trade-off in terms of flood control?

There's not a direct trade-off in the sense of the way the law is put together. This is an effort to balance fish and power.

We often have to have space in our reservoirs for flood control purposes so that if there's a storm or a big snow melt, we've got a place to store water. That space, if it wasn't required for flood control, would be used to store water for fish, so there is a conflict.

The Council has asked us to examine our flood control "rule curves" (our rules for establishing at any one time how much space to save in our reservoirs) with the idea of perhaps reducing that space so that we can have more water for the fish flow.

That's not a new idea. The power folks have been asking us to do that for years, because it also impacts on building increased power. You can't generate power with an empty lake.

So, we are embarked on a study to examine our rule curves in the light of modern technology. We have better forecasting and computers now, and we want to be sure that we're not being too conservative.

On the other hand, I carry my flood control responsibilities very highly. As I told the Council, "If I have a trade-off between the protection of human life and providing additional water for fish, I'll go for the people first." So, I'm going to do my best to create more flexibility in the shape of the water picture for both fish and power.

Explain the problem that occurs in a dry year.

In the dry years we'll have a limited amount of water to do everything with. We need to save enough water to provide for the water budget and at the same time send it down in the winter months when the power load is greatest.

We also want to operate in such a way that the reservoir can refill the next year, so we can start at a reasonable level. Our planning is based on a sequence of three dry years. That's the historic worst situation. At the end of those three years our reservoirs would be dry.

Are you considering changing or adapting that planning base?

No. We're continuing to study it, but we believe that it's the prudent way to plan. There've been studies that suggest that we ought to base our planning on average water years, but what that is essentially saying is that we can do something else in the second and third dry years.

We could generate thermal electricity or have rationing, but there are other interests involved. There are lots of people who are just as interested in the fish that live *in* the reservoirs, fish that don't migrate. They're impacted by this. The Council's looking at these resident fish.

Then you have wildlife that are affected. We can keep the water high so that predators can't reach water-bound nesting areas. If we let the water down, we won't get to do that.

Our charge is to try to articulate these other things to the Council when they're looking at power and fish.

How does the Water Budget Center fit into this picture?

We now have a partner to talk to, which is kind of nice. We may not always like the answers we get, but there's a coordinated position. There's someone we can talk to over time who understands our problems. We're developing a professional staff, a Water Budget Center, the committees that are supported by the Council, the fish and wildlife people, the Inter-Tribal Fish Commission, etc., and these folks know almost as much about our operation as we do.

It forces my people to be sharp. They can't be sloppy in their thinking because there's someone who's going to be listening.

The Corps is historically somewhat autonomous. How are you and your people adjusting to having the Council, the Water Budget Center, and the tribes all speaking to you?

Well, I think we are responding pretty well. I think it's healthy. We're not rolling over and playing dead, but I think the dialogue is staying on a professional level. The communication channels are open and I think we're making progress to the benefit of the fish and wildlife and also to the power planning for the future.

If we do this right we ought to be able to pull together to an understanding. The courts aren't any smarter than we are. What I see is — we're not satisfied with where we are today. We have disagreements. But, I think it's essential and in the public interest that the Corps, BPA, and all the other parties work in cooperation with the Council.

I believe that it's important that the Council be successful not just because the law says so, but because the reaching of a consensus position, so that we can *do something about the problems,* is important. I'm willing to compromise some of our positions in order to achieve that. Everybody will have to compromise to achieve that, both sides. We hope the Council remains the forum for that.■

WASHINGTON

First in region for model home groundbreaking

by Mickey Riley

Builder Les Williams (right) prepares foundation for first demonstration home.

Mickey Riley photos

Laying a foundation to support the Council's model conservation standards has started in Washington State as builder Les Williams of Bellingham begins constructing the first home in a regionwide demonstration program. "I am *really* pleased to be the first," says Williams.

The home will be the first of approximately 600 constructed this spring and summer to demonstrate energy-efficient building methods, their costs, and their savings. These homes are calculated to use 60 percent less heating energy than homes built to current standards.

Williams is building a "super insulated" home in the Ridgemont Subdivision in Bellingham that is calculated to use an annual 1.8 kWh per square foot of electrical energy to heat the home. Program participation sets an annual limit of 2 kWh per square foot usage in western Washington (Weather Zone 1) where the home is located.

The 1,500-square-foot, three-bedroom home is being built for Bruce and Karen Rowell and their seven-month-old son Christopher. "My main reason for choosing a super insulated house," says Bruce, an auditor for Puget Power, "is that I see the results every day on my job. And I've lived in a house that was retrofitted and saw the effects of that on our energy bills. It's simple — when you add more insulation, you use less energy."

The Rowells had been living in an older, two-story house. "It was always drafty," says Karen Rowell, "and we knew it would be expensive to heat, especially with the baby." When they decided to build, comfort and energy costs were main considerations. Karen, who has a home economics background, had been interested in energy-efficient designs for several years and had looked at geodesic, earth bermed, and underground homes. But Bruce kept saying: you don't want that, you want a well-insulated house — one that looks like a normal home. "He was right," says Karen.

The Rowell's new home will have three bedrooms, and the kitchen, dining and living rooms will face south. "I wanted lots of light in my working areas," says Karen, and the 143 square feet of south facing windows will contribute 50 percent of the annual heating requirements of the home.

Builder Les Williams feels strongly about having his homes meet a variety of people's needs. "Energy efficiency is important," says Williams, "but so is livability. People don't want to run around each night, for example, closing up shutters to cut heat loss. You want a house that's easy to live in."

Comfort is another requisite for prospective homebuyers, and super insulated homes consistently score high in that area. The fact that they are well insulated and well sealed means there are no drafts and very little heat loss. Williams estimates his design will have an impressive .05 air changes per hour. Homes built to the current Washington State 1980 Code have .6 air changes per hour which represents about 40 percent of the overall heat loss. Although not required by the program, Williams will have the house "blower door" tested during construction, a process which pressurizes the house to determine air infiltration and helps the builder locate leaks.

A major concern of many homebuyers is the indoor air quality of such well sealed homes. "That won't be a problem," says Bruce Rowell, "since we'll have an air-to-

> *My main reason for choosing a super insulated house is that I see the results every day on my job.*
>
> *–Bruce Rowell,*
> *auditor for Puget Power*

air heat exchanger." An air-to-air heat exchanger is a relatively simple system of ducts and cross changers where the heat from stale, exiting air is transferred to fresh incoming air. All homes in the regionwide demonstration program will have heat exchangers.

Costs and Savings

While all of this sounds promising, the proverbial bottom line is how much will it cost and what will the savings be. Although the specific costs and savings won't be known until approximately one year from now when the homes are occupied and owners have gone through a heating season, builders such as Les Williams rely on their own past experience and the simulations from *Hot Can* and other computer programs.

The figure most often quoted by the dozen or so builders around the state who have built these kinds of homes is an additional cost of approximately $2,500 to $3,000, depending on the size of the home and the climate zone. This is also the approximate amount that builders will receive as an incentive for participating in the program. Estimated costs range from $2 per square foot in Zone 1 to $3 per square foot in Zone 2. Incentives will be paid once the homes are complete and have been certified for occupancy by local building officials.

Savings for consumers are also calculated through *Hot Can*. The home Les Williams is building is estimated to use 1.83 kWh's per square foot annually. The total electrical heating bill, at current Puget Power rates, would be $114 for one year.

Although the figures may seem optimistic to some, in fact, they correspond quite closely with data from other super insulated homes in western Washington that have been metered. Comparisons have also been made between computer model predictions and 28 Oregon homes whose energy use was metered. Actual average usage varied less than 1 percent from what the model predicted.

Builder Les Williams is convinced it's the way to go. "It really doesn't cost that much more," he says. "When you're building a new home, to add an extra $3,000 to the cost of a $70,000 home is miniscule. What it does take is extra time and care. That is possibly the main drawback — it takes more of your time. For myself, that's not really a problem since I do a lot of the work myself and I generally like to oversee my subcontractors. Not everyone likes to take that time."

The demonstration program is an outgrowth of the Northwest Power Planning Council's Regional Plan adopted in April 1983. Included in the Two Year Action Plan was the concept of a Bonneville Power Administration-funded, regionwide demonstration program involving large numbers of builders constructing super-efficient homes. The idea is to train builders to construct homes that meet the model conservation standards. The programs are administered by the states. In Washington, the program is administered by the Washington State Energy Office and is called the Energy Efficient Home Demonstration Program. (In some states the program is referred to as the Residential Standards Demonstration Program.)

To participate in the program, builders must be able to demonstrate that their designs will achieve a specified electrical energy use, depending on climate zone. While thermal performance is a requirement for program participation, there is great flexibility in the choice of construction techniques for builders who want to be innovative. How builders achieve the performance goal is up to them. For builders less familiar with the concept of energy efficient construction, a range of 12 possible approaches is available.

To assist participating builders in making the technology transfer, intensive training sessions are currently being held throughout the region. Various construction techniques related to the building of homes with greater levels of insulation, use of continuous vapor barriers, and advantages/disadvantages of various caulking techniques are some of the topics taught and illustrated.

Livability was big factor for homeowner Karen Rowell (with son Christopher) and Williams.

> *Energy Efficiency is important but so is livability.*
>
> *–Bruce Williams, builder*

The Williams' house will have an R-factor of 24 in the wall insulation (R-19 fiberglass batt and 1-inch extruded polystyrene); *advanced framing* (2x6 studs on 24-inch centers) which allows for greater levels of insulation; R-42 insulation in the ceiling and built-up trusses which allow the insulation to extend over the top of the exterior walls.

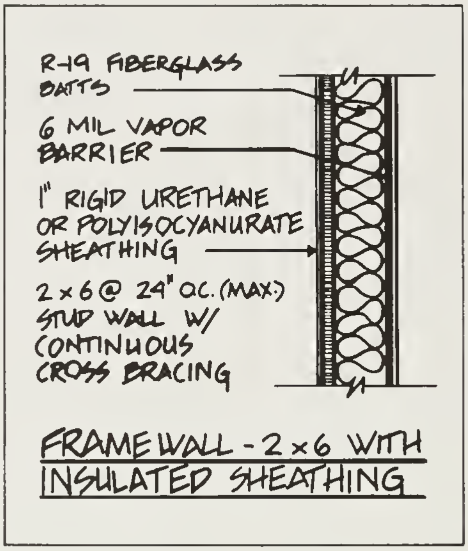
The home will be "sealed" with a 6-mill polyethylene vapor barrier which will be caulked with acoustical sealant where seamed. Doors will be steel with foam core, and windows will be wood frame casement and picture windows. Most windows will be double glazed with the exception of one north facing triple glazed window. The furnace and heat ducts will be inside the home (there is no basement) to maximize the use of heat as well as eliminate the need to insulate the ducts (a savings in construction costs). The home will have a 6kWh forced air electric furnace as opposed to the 20 kWh furnace normally required for a house this size.

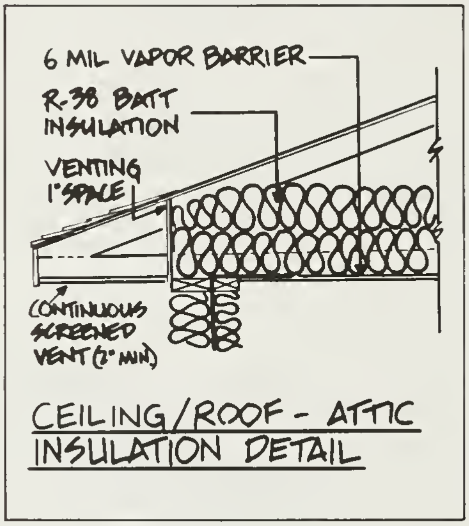
The Rowells will probably install an airtight stove at a later date, but it will not be used for the first year while the energy use is being monitored. None of the homes in the demonstration program will operate wood stoves during the first year of data collection.

A Starr 100 air-to-air heat exchanger will control air quality as well as conserve heat. All of these factors will contribute to making a house that maintains an even temperature and is draft-free and quiet.

While Bruce Rowell is excited about the advantages of his new home, he feels there is not much public awareness of improved design and construction. But builder Les Williams says, "I'm quite confident it's going to continue. As programs like this continue, the level of awareness will rise. In Canada they're already experiencing greater demand (as a result of a somewhat similar demonstration program called R2000).

"I do believe in conserving," says Williams, "and I can do it this way. Besides it gives me a builder's edge. If you were going to build a house — what kind would you build?"■


R-19 FIBERGLASS BATTS
6 MIL VAPOR BARRIER
1" RIGID URETHANE OR POLYISOCYANURATE SHEATHING
2 x 6 @ 24" O.C. (MAX.) STUD WALL W/ CONTINUOUS CROSS BRACING
FRAME WALL - 2 x 6 WITH INSULATED SHEATHING


6 MIL VAPOR BARRIER
R-38 BATT INSULATION
VENTING 1" SPACE
CONTINUOUS SCREENED VENT (2" MIN)
CEILING/ROOF - ATTIC INSULATION DETAIL

Drawings based on construction details by Patricia Boothby from Ecotope's *Design Tools for Energy Efficient Homes*.

As the first signs of spring energized the Northwest, the residential standards demonstration program also came to life across the region. The program recently got off the drawing board as ground was broken for construction of some special energy-efficient homes. These are part of a regional demonstration of homes built to higher energy-efficiency standards developed by the Northwest Power Planning Council.

The program is being administered by the energy agencies of Idaho, Oregon, Washington and Montana.

The genesis of the program is found in the pages of the Council's Northwest Conservation and Electric Power Plan adopted last April. But the program has since taken on a life of its own as builders, architects, realtors and prospective home owners lay the foundation for the program — and for new homes erected in the region. The target is to build at least 600 single-family homes and 70 multi-family structures to the Council's standard, making them 60 percent more energy-efficient than the structures built to current practices.

WASHINGTON

In Washington, 275 builders have applied to construct 400 homes, according to energy program coordinator Linda Steinmann. The Washington Energy Office is continuing to approve builders' applications, and construction on some of the first homes in the program began in mid-April. The goal in Washington is to build 300 single-family and 35 multi-family structures, according to Steinmann.

The energy efficient building program, as it is called in Washington, has "sparked the imagination of homebuilders because they feel that the knowledge of energy-efficient construction techniques they are gaining will give them a competitive edge in the building market," she said.

Washington's homes will be scattered throughout the state. So far, it appears that applications for construction of 45 homes have come from King County; 35 in both Spokane and Pierce Counties; 15 in both Thurston and Kitsop Counties, as well as other counties.

OREGON

The Oregon Department of Energy (ODOE) has received applications for the

REGIONWIDE

Applications pour in for model homes

by Susan Skog

construction of 261 single-family homes, and has selected 153 builders to participate in the program. One reason so many builders are interested is that ODOE has marketed it to potential homeowners, according to ODOE Building Code Program Manager Rich Gallagher. "Clients have been sold on the idea and dragged in their builders."

In fact, over half of the applications submitted by Oregon homebuilders has been for pre-sold homes. The "Oregon Homes," as they are labeled, will be located throughout the state. Applications for 48 homes have been received for the Willamette Valley area, including Eugene and Portland; 17 for central Oregon; 13 for southwest Oregon; and seven for eastern Oregon and the coast. Ultimately, the agency hopes to oversee the construction of 200 single-family homes and 20 multi-family structures.

ODOE hopes its efforts will provide builders with concrete experience with the model standards. So far, Gallagher is encouraged by builders who have attended the training sessions and come away with a "better and more objective idea of what the model standards are." The agency also plans to sponsor a products fair later this spring to link builders with the manufacturers of energy-efficient products needed to construct homes to the model standards.

IDAHO

Response from Idaho homebuilders toward the RSPD effort has been good, but there's room for more participation in the program, according to Steve Payne, energy program specialist, Idaho Department of Water Resources. The department has approved 50 builders for participation in the program of which 23 have submitted designs for pre-sold homes.

Idaho's goal is to monitor the construction of 115 single-family and ten multi-family structures. IDWR recently sponsored a statewide contest to select a name for the demonstration home and has selected "Energy Wise" as the energy-efficient label for Idaho's homes.

Idaho's program also has a unique twist not found in any of the other states. IDWR will monitor the construction of eight natural gas-heated homes built to the model standard. The program will be administered through contracts with Intermountain Gas Company and Washington Water Power Company, in whose service territories the homes will be built.

In Idaho, so far, 15 homes will be built in the southwestern part of the state; 14 in north Idaho; nine in central Idaho; and seven in eastern Idaho.

MONTANA

Construction on Montana's demonstration homes was expected to begin in late April to early May, according to Julie Palakovich, acting program director, Montana Department of Natural Resources and Conservation (DNRC).

Interest in the program in Montana has been high, and Montana's builders also hope the program will help them compete in the building market, she said.

Although Montana's training workshops for prospective participants in the program were still underway in late April, it appears that most of the demonstration homes will be built in the Helena and Bozeman areas.

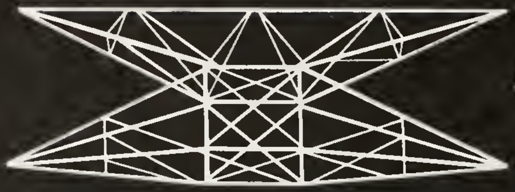
Overall, the Montana DNRC hopes to supervise the construction of 85 single-family and five multi-family structures.

REGIONWIDE

Wayne Hart, Bonneville RSPD program manager, said he is pleased with the way the RSPD program is progressing in the region. BPA probably won't get the full number of targeted homes in every state, because of the still-sluggish economy, fluctuating interest rates and other factors, but it will be able to gather information needed on the cost of building each home to the model standard and the energy use per home.

The National Association of Homebuilders has been very helpful in assisting the development of a cost accounting system to track the construction costs of the demonstration homes, Hart added. The complexities of the building industry impede efforts to gather construction cost estimates and pose "massive" problems, he said. "But I'm still very optimistic of getting a usable product in the end. No one said it would be easy."■

Editor's note: Figures for the number of builder applications were current at publication, but state energy agencies report new applications coming in daily.



INTERTIE ACCESS

In 1983, the sale of the surplus power pushed over electric power lines from southern Oregon to California generated over $400 million for the Bonneville Power Administration and Northwest private utilities. It's no wonder that BPA's planned overhaul of its policy governing access to the Pacific Southwest Intertie has touched off a new round of controversy.

The battle lines were drawn when BPA boldly announced it would assert ownership rights over the transmission lines as it revises its intertie access policy this year. The federal agency claims past intertie practices have been unkind to its ratepayers in years when demand for use of the transmission lines has outstripped capacity. This undercuts Bonneville's ability to market its own surplus power, according to the agency. In fiscal year 1983, Bonneville estimates that stiff competition for the intertie caused the utility to fall short by $95 million of projected surplus sales revenue.

Now Bonneville intends to exercise new authorities granted it under the Northwest Power Act of 1980 to restructure its intertie policy, granting first priority to the export of federal power marketed by the agency, according to Assistant Power Manager Maureen Flynn. Bonneville's efforts are bolstered by legislative language which says the Bonneville administrator shall provide transmission capacity to help dispose of other utilities' surplus power if it "is not in conflict with the Administrator's other marketing obligations and the policies of this Act and other applicable laws."

If the new policy is established, BPA "wouldn't accept power from any other utility at any price if it interfered with Bonneville's access to the intertie," Flynn said. "As long as our surplus remains large — as it will in coming years — it must be made clear that we must do something about it."

Flynn acknowledged Bonneville's future rules governing intertie access would be a "roadblock to large transactions," but she added that the agency would strive to develop "rational pathways" through which other utilities could sell their surplus resources when intertie capacity was available.

References to restricting their use of the intertie rankle Northwest utilities which say Bonneville is overstepping its legal bounds established by Congress. Utility representatives are quick to point to the Regional Preference Act of 1964, which they say directed Bonneville to use its intertie capacity as a "carrier" for transmission of non-federal energy.

The intertie access policy came under the scrutiny of the Northwest Power Planning Council at its March 15 meeting. After four hours of highly-charged testimony from representatives of Northwest private utilities and consumer and environmental organizations, the Council submitted comments to Bonneville recommending that its policy provide firm access only to utilities whose new energy resources are consistent with the Council's Fish and Wildlife Program and its Electric Power and Conservation Plan. The Council reserved judgment on the exact form of the consistency with the energy plan. The Council also recommended Bonneville provide priority wheeling services for cogenerated power from new facilities that would otherwise not be built.

The Council's major concern with the issue grows out of its intent to honor the spirit of the Northwest Power Act, according to Council Executive Director Edward Sheets. When the act was signed into law, few people envisioned an energy surplus would be around the corner. So the Act spoke primarily to acquisition of power and mandated that acquisition take place in specific sequence. That sequence was that the least costly power resources be developed first, beginning with conservation.

However, because of the surplus, transmission of power outside the region, rather than acquisition for use inside the region, may be the force behind developing new resources. "The Council believes that the Act clearly intended that the sequence of developing the least costly resources first still applies," Sheets said. "Otherwise we could be in danger of developing expensive resources now for sales to California with our ratepayers stuck with the bill long after California stops buying."

Private utilities testifying cried foul and accused the Council of trying to force adherence to its fish and wildlife and energy plans through the intertie, which they allege exceeds the Council's legislative mandate. A legal analysis prepared for the Pacific Northwest Utilities Conference Committee (PNUCC) on the intertie issue asserts that "it is clear that no Council direction or control of BPA's transmission management policies was provided for by Congress . . . " The utilities also fall back on Regional Power Act language which says Bonneville, in providing transmission capacity, can't discriminate against a utility on the basis of independent development of resources.

Furthermore, PNUCC director Randy Hardy testified that the Act preserved private utilities' autonomy to develop resources independently of the federally-owned system. Although the utilities don't contemplate "running out and developing willy-nilly a bunch of resources inconsistent with the plan," they can't relinquish that right to Bonneville, Hardy said.

The Natural Resources Defense Coalition (NRDC) agreed that utilities are free to "deviate from regional prescriptions, such as the Council's plan, provided that they use their own resources . . ." In their written comments, NRDC stated that such autonomy, however, isn't extended to access to the intertie, which is a regional resource.

NRDC Executive Director Ralph Cavanaugh, in a separate interview, said it's "absolutely essential" that the Council send a message to the Federal Energy Regulatory Commission (FERC) and other regulators that hydroelectric projects can't be approved in the hopes that their power can be marketed to California.

"Now isn't the proper time to approve the development of generating resources whose sole justification is to meet California's loads," when there isn't enough space on the intertie to handle the current surplus in the region, he added. "If we get

Remains Region's Hot Issue

by Susan Skog

a flood of speculative hydro, that will further complicate the market for existing surplus."

Merrill Schultz, Intercompany Pool director, took issue with conditioning access to the intertie with compliance with the Council's fish and wildlife program by noting that non-federal utilities are only required to take the program into account "to the fullest extent practicable." The Intercompany Pool also represents Northwest utilities.

In a separate interview, Schultz said he fears utilities may be caught in a "whipsaw" when public utility commissions order them to acquire power from small resources, such as hydropower projects, that may prevent them from gaining access to the intertie.

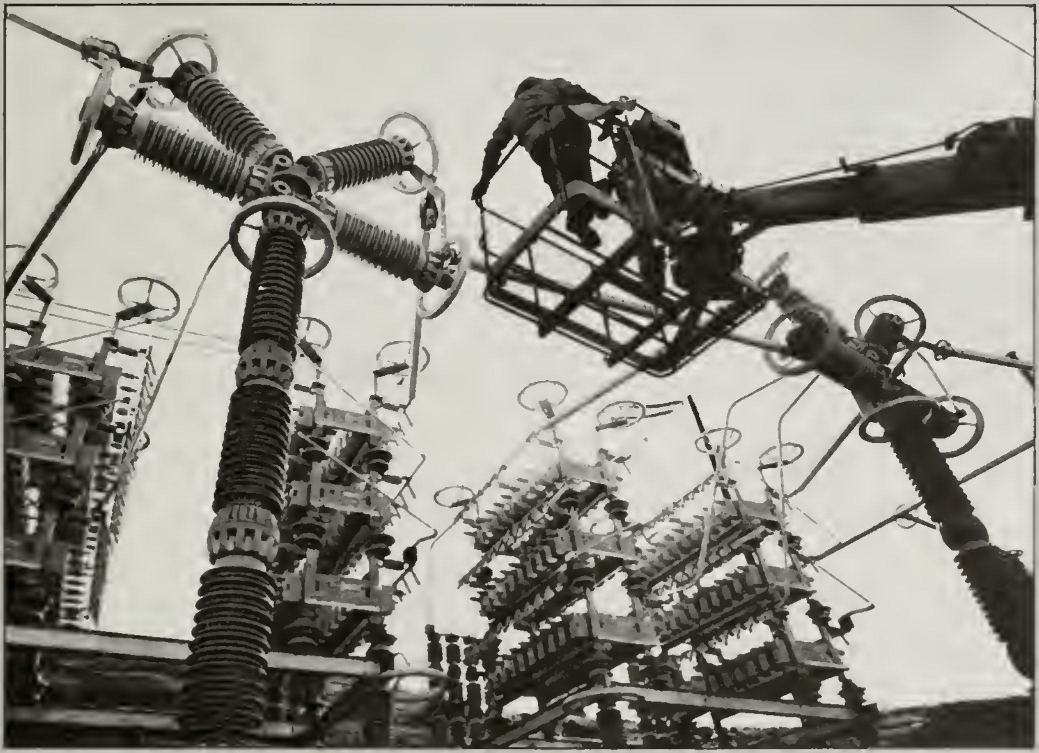
If BPA encourages the development of inconsistent resources through its intertie policy, Northwest ratepayers will pick up the tab for the resources when their power is called back from the Southwest for use in the region, Mark Reis of the Northwest Conservation Act Coalition said.

In its written comments, NRDC added that "every dollar diverted to an inconsistent resource, with an eye to export, is a dollar that could have been spent to realize the goals of the Council's plan."

Bonneville's attempts to establish its domain over the only major link between the power systems of the Pacific Northwest and California will be played out in the coming months. A draft policy will be published this month, and an interim policy, which will be subject to an environmental review, will be issued at the end of June, according to Flynn.

Meanwhile, the Council has held informal meetings with utility and environmental group representatives to discuss the intertie issue in the context of its energy plan.■

Bonneville's new "giant switch" will make branches to the intertie practical because it provides breakers to isolate faults on branch lines. The 25-foot tall switch is the world's first high-voltage direct-current circuit breaker. *(See story on page 3.)*



Wes Taft/BPA photo

Amendments explore number of fish and

If the Northwest Power Planning Council wanted evidence that a regional fish and wildlife program with broad public participation is popular, it has gotten that evidence during its current and first program amendment process.

Not only has there been a large number of recommendations (more than 140), but with few exceptions these recommendations have not challenged the concept or directions set by the program. Overall, the vast majority call for additions to the program.

Because of the sheer number of recommendations, the Council staff has grouped them into broad issues and has published an issue paper on each one. This Energy News *carries a brief summary of each issue paper. The issue papers are designed to present background and stimulate discussion by all interested parties.*

The Council can approve or reject any or all amendment proposals in total or it can modify or adopt portions of a proposal. The Northwest Power Act sets standards by which the Council will judge recommendations. If the Council rejects an amendment, it will explain in writing why the proposal would be less effective than current or other adopted measures or how the measure would fail to meet the standards set by the Act.

1/FUNDING

This category deals with the Bonneville Power Administration's obligation to fund projects within the Council's fish and wildlife program. Proposals address Bonneville funding for federal and nonfederal (possibly non-hydroelectric) projects as well as activities of the tribes and fish and wildlife agencies.

The issues for federal projects revolve around how appropriate Bonneville funding is where the federal agency can obtain Congressional appropriations elsewhere. The Council must decide if Bonneville should fund such projects when they would otherwise be delayed seriously and how such funding could affect the relationship of the federal project operators to Congress.

On nonfederal projects, questions arise over the equity of Bonneville ratepayers bearing the cost of reversing harm to fish and wildlife caused by individual project operators. There is also the question of whether Bonneville funding is the only alternative to getting a measure underway without years of litigation.

Questions regarding tribes and fish and wildlife agencies center around use of Bonneville funds for their staff, meetings, and travel and whether such activities reflect additional work due to the Council's program. A key issue is whether Bonneville is the only realistic source of funds for activities critical to implementing the program.

2/OCEAN SURVIVAL/HARVEST CONTROLS

Management of ocean harvests of fish is critical to the Council's overall goal of protecting and restoring depleted anadromous fish runs. Without ocean harvest controls, many projects within the Columbia Basin could be lessons in futility.

Two amendment applications deal with the fact that the program ties certain funding to "adequate controls" of ocean harvest. At issue is the appropriateness of tying funds for a specific hatchery and an acclimation pond to ocean controls. The Council must decide if existing funding restrictions are the most effective pressure on harvest management agencies to implement controls or if restrictions on other facilities would be more effective.

Other amendments in this category call for more research and data collection and raise the question of to what extent ratepayers should fund these activities.

3/ANADROMOUS FISH RESEARCH

These proposals deal with the types of anadromous fish research to be included in the program. In this case, the term research is used broadly to include surveys, inventories, and development. A variety of new activities has been proposed.

These include studies of fish stress, plans to increase bypass efficiency, studies of water temperature effects and controls, studies to develop habitat preference curves, surveys of habitat, studies to identify stray disease carriers, a feasibility study of using a fishway for rearing, a study of fish production potential, inventories of stock and estimates of genetic variability, and establishment of a panel of genetic experts. Most proposals are for a specific site.

There are also two staff proposals designed to clarify the intent of program language now considered too vague.

Major concerns deal with potential duplication and cost for the activities proposed. Another important issue is the application of site-specific research to other sites. There is also the question of whether some proposals might be premature until the goals study is completed. The Council must also decide if some of the problems proposed for study could be alleviated without amending the program. In some cases, there are conflicting recommendations.

Illustrations by Sharon Torvik, courtesy Oregon Dept of Fish and Wildlife

wildlife issues

4/DEMONSTRATION RESEARCH PROJECTS

The fish and wildlife program contains a number of measures requiring testing and evaluation of prototype fish bypass systems using conventional screening systems. The program also stipulates the use of the best available means to aid downstream migration.

One proposal calls for Bonneville to fund development and testing of "improved" bypass designs to convey juvenile fish from powerhouse intakes to the tailwater below the dam. Another calls for cooperative funding between Bonneville and Crown Zellerbach to install and test a new type of screen at one of the latter's turbines.

The Council must determine if the first proposal would duplicate ongoing research funded by someone other than Bonneville, if the expense is justified, and if the proposed measure is more effective than current measures.

In the second proposal, the Council must assess the potential for a better and more cost-effective means of protecting downstream migrants.

5/CAPITAL CONSTRUCTION

Several proposals call for Bonneville or the Corps of Engineers to fund major new construction. Others would modify existing measures which already require capital construction. One amendment proposal challenges the program's priority for improving existing hatchery facilities over constructing new facilities. Still other amendments are designed to correct problems perceived at specific projects.

The posposed new projects include a bypass system, a vertical slot counter, additional or alteration of passage facilities, structural modifications to improve fish production or survival at artificial production facilities, and improvements and evaluation of existing fishway systems. Nearly all proposals are site specific.

The major issue is what types of construction are appropriate for funding by Bonneville and by the Corps.

6a/SUBBASIN PLANNING

The concept of subbasin planning was proposed by the Council's Fish Propagation Panel. It addresses the fact that the program stipulates a number of habitat and passage projects but, in many cases, sets no priorities. Subbasin planning would set priorities among the habitat improvement and passage projects both within a particular subbasin and among subbasins. (A subbasin is a major tributary or drainage in a river system.)

The concept is designed to provide a comprehensive and integrated planning approach. It involves acquiring information on a broad scope including institutional and legal considerations, geographic characteristics, land ownership and land use practices, fishery resources, and cost.

The Panel suggests Bonneville funding would follow a logical sequence of priorities and this would increase fish production and protect ratepayer investment. The Panel also proposes to rely on information from the fish and wildlife agencies and tribes to develop subbasin plans.

The Council must consider the feasibility and effectiveness of this planning tool and weigh it against a potential for delay in funding projects.

6b/OFFSITE ENHANCEMENT

Offsite enhancement refers to the use of substitute resources and environments to compensate for natural habitats which have been lost through hydroelectric development. Most of the proposals would add more habitat improvement and passage restoration projects to the program.

Altogether, the proposed amendments would add 215 offsite enhancement projects to the existing 70 projects. All but three proposals are stream or site specific. The three exceptions address compatability of harvest regulations and habitat improvements, spawning ground surveys, and adult counting and collection.

Because of the number of possible projects in the basin, it may be difficult to select projects and develop an appropriate implementation sequence. The issues therefore are: How much offsite enhancement is appropriate for Bonneville funding? Where and when, and in what order? So a key issue is what, if any, new offsite enhancement should be initiated before that study is completed.

8/PROTECTED AREAS

The fish and wildlife program directs Bonneville to fund a study of alternative means for classifying and designating streams and wildlife areas to be protected from future hydroelectric development. The study is to look at existing information on hydroelectric potential as well as fish and wildlife values. The Council will use this study as a basis for designating which areas should be protected from development.

Because the study is closely related to the power plan's site-ranking study, the Council also set up the Hydropower Assessment Steering Committee to advise on approaches and avoid duplication of effort.

One amendment would modify the program by requiring evaluation of specific sites already identified in several existing studies and inventories and would add a detailed list of the studies to be used. The other amendment would add a new step by designating the fish and wildlife agencies and tribes to define important habitats based on criteria they would develop. The Council then would use this input, plus the study results, to designate protected areas.

An issue in both amendments is whether the proposals offer new ideas or duplicate current measures and whether they provide a more cost-effective way to accomplish protection goals.

For example, the program mandates the use of existing studies. The Council must decide if this already includes the studies in the first amendments and if a specific list of studies would impose a limit. The second amendment is designed to use the fish and wildlife agencies and tribes because of their special knowledge. The question then is whether they are already adequately represented as part of the Hydropower Assessment Steering Committee and part of the consultation process.

9a/RESIDENT FISH GOALS

While the Council recognized the desirability of setting goals for resident fish, it decided when it completed the program that current information was inadequate to develop such goals.

The amendment proposes that Bonneville fund a study by the fish and wildlife agencies and tribes to identify the impact of hydroelectric development on resident fish in each major basin within the Columbia system. These entities also would propose resident fish goals to be used as a basis by the Council for adopting goals. The idea parallels the goals study for anadromous fish.

There are several issues here. One is whether Bonneville should supervise the study. Also, the state of Montana objects to the basin-by-basin approach (as opposed to a per project approach).

Such a study could involve twice as many basins as the anadromous fish study because resident fish appear in more basins. And since hydroelectric development may have helped resident fish in some cases, gains must be weighed against losses. Questions related to harvest regulations and the effects of enhancement and mitigation efforts for anadromous fish on resident fish also may arise.

9b/RESIDENT FISH

A large number of amendment proposals deal with resident fish. These fall in five broad categories. The first category calls for Bonneville funding of new hatcheries. The Council may wish to assess the degree to which hydroelectric projects are responsible for fish decline and the level of mitigation necessary before determining the need for new hatcheries. Availability of existing hatchery space and alternative enhancement means must also be weighed.

Proposals to purchase surplus water to provide non-irrigation flows to streams below reservoirs and alleviate fish losses are included. So are proposals for habitat improvement projects at various streams and enhancement opportunities within and beneath reservoirs. Most are new projects. Some propose that the Fish Propagation Panel set priorities and dates for completion. Several raise the question of trade-offs between resident fish and anadromous fish.

Two proposals deal with water budget effects and water level fluctuations on resident fish at specific sites. The final category of proposals would modify current measures, one for language clarification and one to require an independent study.

10/WILDLIFE

Several of the wildlife amendment proposals would affect the planning and implementation schedule of the existing program. Most recommendations are research-oriented and center on determining the extent of hydroelectric impacts on wildlife and their habitat. The needs for a funding mechanism and for continued consultation are common denominators in many applications.

Of four broad wildlife proposal categories, the first consists of new measures which call for Bonneville to fund new planning and/or mitigation and enhancement activities.

A second group proposes extending completion dates for two activities. There are also proposals to clarify existing program language, with the major issue centering on who should fund implementation of recommendations as they are developed. Other wording changes deal with what projects are included in program tables.

Even proposals which could be termed major revisions do not essentially change the current direction of the program. One would change the way mitigation reports are handled and emphasize the use of an independent party. Another proposes considerably more detail in the program, particularly to identify which species of wildlife are most important at particular projects.

Because of the detail, the Council has several options for combining parts of the proposals with the program as well as rejecting or accepting the amendments.

11/PROGRAM SCHEDULING

Amendments for scheduling fall into two groups. The first is a staff proposal to add a three-year action plan and five-year objectives into the program. The second group seeks to change certain completion dates specified in the program.

Currently, there are more than 220 action items in the program, and amendments could increase this number significantly. The sheer number makes it difficult to determine the appropriate sequence for implementing measures, particularly since many current measures do not include dates.

The proposed action plan and objectives are designed to overcome this problem by giving more specific direction for scheduling implementation and funding. The objectives and actions are based on the current program but could encompass amendments. Three and five-year periods were chosen to fit with budget and fish cycles and establishment of program goals.

The Council must weigh several issues including the need for flexibility, the degree of specificity, feasibility of setting realistic dates within the time allotted, and the basis for selecting priorities.

The proposals to change completion dates fall into two groups — those that substitute annual progress reports for current completion dates and those that would change actual dates. The Council must weigh how realistic a date is and the potential for and impact of delay.

11a/AMENDMENT SCHEDULING

Under the current schedule, both the fish and wildlife program and power plan will be amended concurrently every two years starting in 1985.

Adhering to this schedule could mean that both Council resources and the resources of the parties to the amendment process would be taxed as they turn their attention to both the plan and program amendments. In addition, there is concern about the feasibility of implementing the 1984 amendments at the same time new amendments are being considered.

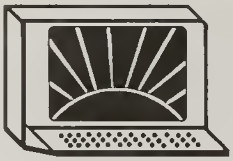
The Council must weigh these issues against the value of sticking to the announced schedule. There are three primary options. The Council could retain the simultaneous amendment process. It could choose to amend the program and power plan on alternating years, or it could retain the current schedule but limit the 1985 program amendment process to certain types of proposals.

12/TECHNICAL CORRECTIONS

This category is for changes which are designed to correct errors or omissions in the program but which do not affect its substance. Most technical corrections are wording changes intended to add clarity. Some deal with minor process changes and are not expected to be controversial. Two changes are designed to bring the program into conformity with the power plan.■

Editor's note: The numbers on the preceding synopsis correspond to the numbers on issue papers. Number 7 is missing because it was incorporated into other issue papers.

REGION RICH IN RESOURCES



by Ruth Curtis

Writing a paper on hydroelectric development in the Northwest? Doing research on the fish and wildlife habitats in the Columbia River Basin? Where do you go for background information?

One of the best resources is the Northwest Power Planning Council's public library where you can get information on a wide range of subjects. In addition to the Council, there are a number of other rich resources in the region. These organizations can help provide the background necessary to understand the complex energy and fish and wildlife issues this region is facing.

NORTHWEST POWER PLANNING COUNCIL LIBRARY

The library's primary purpose is to provide information to the Council's staff. This has resulted in a collection of materials which deal with energy resources and fisheries (particularly in relation to the Columbia River Basin). The public is welcome to make use of the collection, either by phone or in person. The library also distributes many of the Council's publications and provides information about the Council's activities.

Northwest Power Planning Council Library
700 S.W. Taylor, Suite 200
Portland, Oregon 97205
(503) 222-5161 — Portland
1-800-452-2324 — Oregon
1-800-222-3355 — Northwest
Hours: 8:30 a.m. to 5 p.m. weekdays.
Please call first.

LOCAL PUBLIC LIBRARY

The public library is a resource that should not be neglected. It can provide general energy and fish and wildlife information and will also provide information on what other local resources are available. The local science museum, Audubon Society, etc., might be a gold mine. Public libraries can help direct people to those bonanzas.

UTILITIES

Local utilities can answer questions about electric bills, energy audits, and their own operations. They frequently distribute brochures on such topics as home weatherization and act as a referral agency. When calling, ask for Public Information.

Portland General Electric, Pacific Power and Light, and Puget Sound Power and Light have libraries that are open to the public (with a few restrictions). Their collections generally cover electric engineering, utility management, and energy resources.

STATE ENERGY OFFICES

Contact these offices for technical advice, financing information (tax credits, audits, low interest loans) and general energy information.

Idaho Division of Energy Resources
Statehouse
Boise, Idaho 83720
1-800-334-SAVE

Montana Department of Natural Resources and Conservation
Energy Division
32 S. Ewing
Helena, Montana 59620
(406) 444-6696

Oregon Department of Energy
102 Labor and Industries Building
Salem, Oregon 97310
1-800-221-8035

Washington State Energy Office
400 E. Union St.
Olympia, Washington 98504
(206) 754-0700

UNIVERSITIES

Oregon State University has a Sea Grant College Program which can be a very useful source of information. The program is concerned with marine and anadromous fish and produces various brochures, reports and films. Directories of current projects and publications are available upon request.

Oregon State University
Sea Grant College Program
Administrative Services Building, Rm. 320
Corvallis, Oregon 97331
(506) 754-2714

The Fisheries Oceanography Library at the University of Washington is available for the public to use, although non-students are not allowed to borrow materials.

University of Washington
Fisheries Oceanography Library
151 Oceanography Teaching Building
WB-30
Seattle, Washington 98195
(206) 543-4279

ENERGY EXTENSION SERVICES

The State Energy Extension Services are often the best source of information for the general public. They offer pamphlets and classes on such subjects as buying a woodstove, choosing an architect for a solar house, and low-cost weatherization. Each state extension service has a different structure. County extension offices, state energy offices, and utilities can put people in touch with their nearest energy extension agency. The central offices are as follows:

Idaho Energy Extension Service
Statehouse
Boise, Idaho 83720
1-800-334-SAVE

Oregon State University Energy Extension Service
114 Dearborn Hall
Corvallis, Oregon 97331
(503) 754-3004

Washington Energy Extension Service
Seattle University
Seattle, Washington 98122
(206) 626-6225

While Montana does not have an energy extension service, the Energy Division of the Department of Natural Resources and Conservation provides similar services. (See address under state energy offices.)

STATE FISH AND WILDLIFE AGENCIES

These agencies are responsible for fish and wildlife resources within each state's boundaries. Contact them for information on the state's policies and projects. They can also act as a referral agency. Several publish newsletters or magazines that describe their activities. These are usually free or available for a minimal charge.

Idaho Fish and Game Department
600 S. Walnut
Boise, Idaho 83702
(208) 334-3700

Montana Department of Fish, Wildlife and Parks
1420 E. 6th Avenue
Helena, Montana 59620
(406) 444-2535

Oregon Department of Fish and Wildlife
506 S.W. Mill Street
Portland, Oregon 97201
(503) 229-5403

Washington Department of Fisheries
General Administration Building
Olympia, Washington 98504
(206) 753-6552

Washington Department of Game
600 N. Capital Way
Olympia, Washington 98504
(206) 753-5700

U.S. FISH AND WILDLIFE SERVICE/ NATIONAL MARINE FISHERIES SERVICE

These two federal agencies can provide information on specific animal species and their own activities. The National Marine Fisheries Service (NMFS) deals with the ocean and commercial aspects of anadromous fish, while the U.S. Fish and Wildlife Service is responsible for resident fish, anadromous fish (mainly during their freshwater phases) and wildlife.

For information from the Fish and Wildlife Service contact:

U.S. Fish and Wildlife Service
500 N.E. Multnomah, Suite 1692
Portland, Oegon 97232
(503) 231-6121

NMFS's parent organization, National Oceanic and Atmospheric Administration, maintains an information center:

N.W. Regional Ocean Service Center
700 Sandpoint Way, N.E.
Bin C 1-5700
Seattle, Washington 98115
(208) 527-NOAA

U.S ARMY CORPS OF ENGINEERS

The Army Corps of Engineers builds and maintains the dams that provide most of our power, consequently they are the best source of information on their projects. The North Pacific Division office is in Portland and there are district offices in Seattle, Portland, and Walla Walla. Each of the district offices has a library which is open to the public (with a few restrictions). The Corps produces various pamphlets and films which describe its work. Contact the Public Affairs Office for these materials. Public Affairs will also provide referrals to the Corps' technical staff who are able to answer more detailed questions.

U.S. Army Corps of Engineers, North Pacific Division
Public Affairs Office
220 N.W. 8th Street
Portland, Oregon 97209
(503) 221-3768

BONNEVILLE POWER ADMINISTRATION

Public Involvement Office

Contact this office for information on BPA policies and current programs. It maintains mailing lists for materials on current issues. Interested people can have their names added to the lists.

Public Involvement Office
P.O. Box 12994
Portland, Oregon 97212
230-3478 — Portland
1-800-452-8429 — Oregon
1-800-547-6048 — Other western states

Public Information Offices

Public Information provides general information on BPA programs, and distributes pamphlets about the Bonneville Power Administration and its activities.

Public Information Office — AI
P.O. Box 3621
Portland, Oregon 97208
(503) 230-5131

Similar information is available from BPA Area and District Offices.

Upper Columbia Area Office
Spokane, Washington
(509) 456-2151

Lower Columbia Area Office
Portland, Oregon
(503) 230-4551

Puget Sound Office
Seattle, Washington
(206) 442-4136

Snake River Area Office
Walla Walla, Washington
(509) 525-5500

Eugene District Office
(503) 687-6959

Idaho Falls District Office
(208) 523-2706

Missoula District Office
(406) 329-3860

Wenatchee District Office
(509) 662-4377

BPA Libraries

The libraries provide general energy information. All are open to the public.

Main Library, SSL
1500 N.E. Irving, Suite R100
P.O. Box 3621
Portland, Oregon 97208
(503) 230-4171
Hours: weekdays 8:00 a.m. to 4:30 p.m.

Seattle Library Branch
RM 414 Federal Building
915 Second Avenue
Seattle, Washington 98174
(206) 442-8340
Hours: 8:00 a.m. to 4:30 p.m., Monday through Thursday. Please call first.

Ross Library Branch
Vancouver, Washington
(206) 690-2617
Hours: 8:00 a.m. to 4:30 p.m., Monday through Thursday. Please call first.

U.S. DEPARTMENT OF ENERGY

One of the best ways to get information from the maze that calls itself the Department of Energy is to use the following directory compiled by the Energy Information Administration. It tells who specializes in what subject areas. If they cannot help you, they will route you to someone who can.

Energy Data Contact Finder. Information Referral Division, National Energy Information Center, Energy Information Administration. Washington, D.C. (DOE/EIA-0259). Most recent — December 1983. Order from:

U.S. Department of Energy
National Energy Information Center
Room 1F-048
Forrestal Building
Washington, D.C. 20585
(202) 252-8800

AMENDMENT PUBLIC PROCESS

The public amendment process for the Council's fish and wildlife program is in full swing now, and by June the Council will have a draft of the amendments.

Deadline for publishing the draft is June 29, and the public will have until August 10 to comment in writing (see instructions). In addition to written comment, any individual or organization will have an opportunity to give public testimony (see instructions). The Council will hold public hearings on the draft program in each of the region's four states. These hearings supplement the opportunities for public comment on the amendment issue papers which have been taking place at regular Council meetings this spring.

The hearings will be held the last two weeks in July in order to give recipients of the draft at least two weeks to receive and read it. See the box on this page for dates in each state. (To receive a draft, fill out and send in the order form in this issue.)

As soon as specific dates, times and sites for the hearings have been set in each state, a special notice will be sent to the public. Those on the mailing list for this issue of *Energy News* will automatically receive that notice. Announcements will also be made to the media.

General directions for both written and oral public comment are included in this issue. In addition, transcripts of the hearings and written comments will become part of the Council's administrative record and will be available to the public for review between 9 a.m. and 4:30 p.m. at the Council's central office. For more information, contact the Public Information and Involvement Division at the central office. Address and toll-free number are listed on the inside front cover of this issue.

COUNCIL PUBLICATIONS ORDER FORM

Please send me a copy of the following publications of the Northwest Power Planning Council.

☐ Draft of the Fish and Wildlife Amendments
(to be published no later than June 29, 1984)

☐ Draft of the 1984 Annual Report
(to be published no later than June 29, 1984)

☐ Staff issue paper on the "Utility Death Spiral"

☐ Draft Council budget (revised FY85 and 86)
(Deadline for public comment is June 7, 1984)

Name ____________________
Organization ____________________
Street ____________________
City/State/Zip ____________________

Instructions for oral comment at hearings

1. Requests for time slots must be made at least five days prior to the hearings to Ruth Curtis, information coordinator, at the Council's central office, 700 S.W. Taylor, Suite 200, Portland, Oregon 97205 or (503) 222-5161 (toll free 1-800-222-3355 out of state or 1-800-452-2324 in Oregon).
2. Those who do not sign up for time slots will be permitted to testify on an "as time permits" basis.
3. Hearings should be used to *summarize* written comments. Comments should *not* be read.
4. Ten copies of written testimony should be submitted to the Council recorder at the hearings. This person will be sitting at a table near the Council members. *(See instructions for written comment.)*
5. Organizations will have 15 minutes to summarize written testimony. Individuals will be limited to five minutes. These time limits will be observed strictly.
6. The Council may ask questions for clarification.

Instructions for written comment

1. Comments must be received in the Council's central office, 700 S.W. Taylor Street, Suite 200, Portland, Oregon 97205 by 5 p.m. on August 10. Comments received after that date will not be considered.
2. Written comments should be marked "Fish and Wildlife Program Comment."
3. Comments should be specific and concise. They should refer to program sections by number and provide alternative language to aid drafting.
4. If possible, submit a "marked up" copy of the draft program indicating suggestions or revisions. Suggested deletions should be lined out and placed in parentheses (~~line out portions of the draft to be deleted~~). Suggested new language should be underlined; underline all new language. All comments should be typed and double spaced. Lengthy insertions should be on a separate sheet, and reason for suggested changes should also be stated separately.
5. Provide ten copies of all comments.

Northwest Power Planning Council
700 S.W. Taylor, Suite 200
Portland, Oregon 97205

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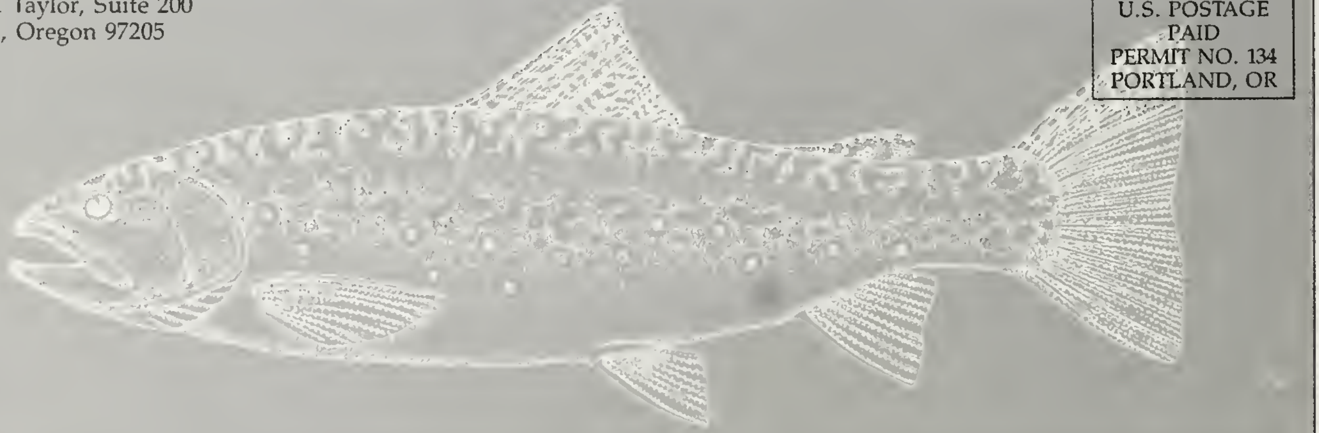

Illustration by Sharon Torvik, courtesy of Oregon Dept. of Fish & Wildlife

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PLEASE RETURN

NORTHWEST ENERGY NEWS

Volume 3, No. 4 Northwest Power Planning Council *July/August 1984*

POLY
Forecast
BONNEVILLE DAM
CENTRALIA AVENUE
COLSTRIP PLACE
FOLLOW INSTRUCTIONS ON TOP CARD
BOARDMAN WALK
TROJAN GARDENS
CHANCE
WILL SUPPLIES LAST?
HANFORD AVENUE
THE ELECTRIC COMPANY
Community Chest
FAILURE TO ADOPT M.C.S.
PAY SURCHARGE
????
surplus surplus surplus surplus surplus surplus
COLLECT California Revenue WHEN YOU PASS
GOAL
Chance
WPPSS - 3 FUNDS UNAVAILABLE
GO BACK 6 SPACES
THE ELECTRIC COMPANY
If one "Utility" is owned rent is 4 times amount shown on dice
If both "Utilities" are owned rent is 10 times amount shown on dice
500
500
1000
1000

STATE DOCUMENTS COLLECTION
JUL 2 6 1984
MONTANA STATE LIBRARY
1515 E. 6th AVE.
HELENA, MONTANA 59620

Montana State Library
3 0864 1004 5527 1

Idaho

Northwest Power Planning Council
Statehouse Mall
Towers Building
450 West State
Boise, Idaho 83720
Telephone: 208-334-2956
Council members:
W. Larry Mills
Robert Saxvik

Montana

Northwest Power Planning Council
Capitol Station
Helena, Montana 59620
Telephone: 406-444-3952
Council Members:
Keith Colbo, chairman
Gerald Mueller

Oregon

Northwest Power Planning Council
505C State Office Building
State of Oregon
Portland, Oregon 97201
Telephone: 503-229-5171
Council members:
Roy Hemmingway
Donald Godard

Washington

Washington State Energy Office
400 East Union
Olympia, Washington 98504
Telephone: 206-754-0701
Council Members:
Charles Collins
Kai Lee

Central

Northwest Power Planning Council
700 S.W. Taylor, Suite 200
Portland, Oregon 97205
Telephone: 503-222-5161
Toll Free: 1-800-222-3355
(1-800-452-2324 in Oregon)
Executive Director:
Edward Sheets

NORTHWEST
ENERGY NEWS
is published bi-monthly by Northwest Power Planning Council, 700 S W Taylor, Suite 200, Portland, Oregon 97205
The Northwest Power Planning Council is required to develop a program to restore the Columbia fisheries and a regional electric energy plan, to be carried out by the Bonneville Power Administration, emphasizing cost-effective conservation and renewable resources
Editor: Dulcy Mahar
Graphic Design: Linda Sawaya

EDITOR'S NOTES

Frequently we get requests for permission to reprint something from *Energy News*. We have no objection to reprints of articles so long as the source is credited. Illustrations are a different thing. In some cases the artist, not the Council, holds the republication rights. So, for your own legal protection, check with us first before using an illustration.

Well, certainly someone is reading *Energy News* . . . and all the way to the back section. That's where we ran a list of information sources for the region in the last issue. Since then, several people have written in to tell us about a resource we'd overlooked.

Therefore, we've run "chapter two" of the informational resource listing in this issue and are fully prepared to run chapter three, etc., if indeed we've missed someone else.

Also, in the last issue we used two illustrations showing construction details in energy-efficient building. For those of you who expressed interest in more information on the subject, the drawings were based on illustrations from **Design Tools for Energy Efficient Homes** by Ken Eklund and David Baylon, 3rd edition, published by Ecotope, Inc. It is available for $14.95 (plus $1 postage) from Ecotope, 2182 E. Madison, Seattle, WA 98112. (Washington residents should add $1.18 sales tax.) —DM

Cover illustration by Georgiana Nēhl

CALENDAR

July 16 — Public hearing on Northwest Power Planning Council's Fish and Wildlife Program amendments in Boise, Idaho.

July 18-19 — Northwest Power Planning Council meeting in Spokane, Washington.

July 19 — Public hearing on Northwest Power Planning Council's Fish and Wildlife Program amendments in Spokane, Washington.

July 24 — Public hearing on Northwest Power Planning Council's Fish and Wildlife Program amendments in Missoula, Montana.

July 24-25 — Northwest Public Power Association Rates Symposium in Missoula, Montana.

July 26 — Public hearing on Northwest Power Planning Council's Fish and Wildlife Program amendments in Portland, Oregon.

August 8-9 — Northwest Power Planning Council Meeting in Kalispell, Montana.

August 10 — Comment period on Fish and Wildlife Program amendments closes.

August 23-25 — Energy '84 in Honolulu, Hawaii. Sponsored by the American Society of Civil Engineers — Energy Division. Contact Dr. Pat Takahashi, Dept. of Civil Engineering, University of Hawaii, Honolulu, Hawaii 96822, (808) 948-7658.

August 26-28 — 1984 Geothermal Resources Council Annual Meeting. Reno, Nevada. Contact Geothermal Resources Council, P.O. Box 1350, Davis, California 95617.

August 29-30 — Northwest Power Planning Council Meeting in Portland, Oregon.

September 14-15 — 1984 Northwest Solar Conference in Portland, Oregon. Sponsored by the Solar Energy Association of Oregon.

September 19-20 — Northwest Power Planning Council Meeting in Boise, Idaho.

September 24-25 — Wild Trout III in Mammoth, Wyoming. Sponsored by the Federation of Fly Fishers, Trout Unlimited, U.S. Department of Agriculture and U.S. Department of Interior. Contact the Federation of Fly Fishers, P.O. Box 1088, West Yellowstone, Montana 59758.

October 26,1984 — Conference on the Politics and Economics of Columbia River Water in Portland, Oregon. Contact Michael S. Spranger, Washington Sea Grant, 1919 N.E. 78th Street, Vancouver, Washington 98665, (206) 696-6018.

Compiled by Ruth Curtis

IN THE NEWS

Public input invited for F&W amendments

The "gone fishing" sign is figuratively — as well as literally — hung on a lot of doors this summer. But this time the parties are working hard to protect fish, not just catch them. Organizations as well as private individuals have been preparing testimony for proposed amendments to the Northwest Power Planning Council's Columbia River Fish and Wildlife Program. Deadline for written testimony is August 10, and hearings for oral testimony are being conducted in the four Northwest states this month.

The amendments process is a major opportunity for Northwest citizens to participate in one of the nation's most extensive efforts to save a natural resource. The fish and wildlife program, adopted in 1982 at the direction of Congress, is designed to protect and restore the fish and wildlife which have been damaged as a result of hydroelectric development and operations in the basin.

In all, 127 amendments from 28 parties are being considered. Of those, 55 have been proposed tentatively for adoption and 72 have been proposed for rejection. In addition, the Council staff has proposed 31 amendments. The numbers don't tally exactly with the 142 recommendations originally received because some amendments have been modified and combined as a result of consultation with the parties involved. This is particularly true where two very similar recommendations came from two different sources.

Tentative rejections have been based on a Council belief that the proposal did not reflect the best available scientific knowledge, duplicated other portions of the program, did not meet the goals of the program, or was not the most cost effective way to meet those goals. The Council must also consider legal rights and the mesh of current activities of tribes and fish and wildlife agencies in making its decisions.

No final decision will be made on the amendments until all public testimony is considered. The final adoption will be at the Council's October 10-11 meeting in Yakima, Washington. Hearing dates appear in the **Calendar** of this issue. An order form is also included to send in for materials related to the amendments. For information about testimony, contact Ruth Curtis, information coordinator, at the Council's central office. Address and phone number are on the inside front cover.

A brief synopsis of the amendments appears on pages 20 and 21 of this issue.

Three changes proposed for NW power plan

The Northwest Power Planning Council is proposing three amendments to its Northwest Power Plan. The deadline for public comment on two of the amendments is 5 p.m., July 25.

The first of the two deals with the formula for determining eligibility for 100 percent financing through the Bonneville Power Administration's residential weatherization program. The formula can be found under Program Design Principle 1E of the two-year action plan. The proposed amendment is in response to concern over the equity and administrative effectiveness of the existing formula.

Compared to poverty guidelines set forth by the federal Office of Management and Budget, the formula appears to unfairly restrict the number of low-income houses eligible for this financing. At its June 7 meeting, the Council voted to propose substituting use of the "regional population weighted median" for the "median city or county" currently in the calculation table.

The second revision proposed at that meeting concerned hydropower options (Action Item 14.1) in the power plan. The current language calls on Bonneville to acquire options in six specific categories to test the feasibility of the options concept in the context of the Federal Energy Commission's (FERC) licensing process.

However, since that language was adopted, it has become apparent that state laws and regulations may pose restraints as significant as those posed by FERC. The amendment would delete the list of specific projects and replace it with objectives for hydropower options. The Council believes this would provide more flexibility to select projects which are best suited for testing the options concept.

A third amendment to the power plan was proposed at

Spring migration brought increased activity for the many groups working to protect fish throughout the region. Here, Barry Keesee and Larry Basham count and check brands on smolts trapped at Rock Island Dam near Wenatchee, Washington. Keesee is a fish and wildlife specialist with Chelan Co. PUD, and Basham is field operations coordinator for the Water Budget Center. This is one of a number of activities that took place during the peak migration between April 15 and June 15.

Wes Taft BPA photo

IN THE NEWS
continued

the Council's June 6 meeting and relates to the amendment schedule for the Columbia River Basin Fish and Wildlife Program. Deadline for public comment on this amendment is 5 p.m., August 10, which coincides with the deadline for comment on the fish and wildlife program amendments. In Chapter 11 of the power plan, the Council established a schedule for simultaneously amending both its power plan and its fish and wildlife program.

Largely because of its experience with the current fish and wildlife amendments (which involved some 142 recommendations from 28 parties), the Council now feels that a concurrent amendment schedule would not be wise because of the strain it would put on both the Council's staff and the region's interested parties.

Advance mailings as well as federal register notices have gone out on all three proposed amendments. For more information about any amendment or on how to submit testimony, contact the Council's Public Information and Involvement Division at its central office (see address inside front cover). A fuller explanation of the fish and wildlife amendments appears elsewhere in this issue.

Congress looks at regional planning

The Northwest's regional planning is being held up as a model for the rest of the country. Northwest Power Planning Council representatives appeared before the U.S. Congress in late June to describe how such planning works through the guidance of the Council.

The occasion was a hearing on HR 5766 before the House subcommittee on energy conservation and power chaired by Richard Ottinger of New York. The bill would permit interstate compacts similar to the Council. Most specific powers and duties of these compacts would be left to the states participating in the compact. The major goal of the bill is to meet future energy demand at the least system cost while ensuring reliable energy delivery.

Council testimony stressed that that goal can best be met if the states are given the freedom to work out their energy dilemmas cooperatively across state lines.

WPPSS holds lessons according to authors

An article in the May/June issue of *Public Power* magazine based in Washington, D.C., lists five major lessons learned as a result of the Washington Public Power Supply System (WPPSS) default. Some of those lessons, such as using range rather than single-line forecasting, have already been incorporated into the region's Northwest Power Plan.

Authors Austin Koenen and John Gillespie, a director and associate respectively of a public power finance group, say "planners need to chart maximum and minimum load growth scenarios as well as the projected growth" so that they can consider in detail if the project is off target.

They also stress financial flexibility which they translate to mean a number of smaller projects with shorter construction periods rather than reliance on a single large generating unit.

Economic feasibility is also fundamental, according to the authors, and should be placed ahead of the project's "legal security or its attractiveness to utility managers." Ratepayer willingness, not just ability, to pay was also cited as an important planning factor. The authors cite ratepayer resistance to proposed solutions as a major factor in the WPPSS stalemate.

Management was also considered a key, and "performance, not promises, will be the measure of the post-WPPSS marketplace," the article states. It goes on to say that the ability of executives to manage their utilities in everything from "load management techniques to financial restructuring and strategic planning" will be tested as never before.

The ultimate lesson from WPPSS, the authors believe, is that the "human and financial costs of attempting to resolve problems of this complexity after they occur" may not be worth it in terms of the productivity they will absorb that could be used elsewhere.

NORTHWEST Sports

Over 26 million young salmon and steelhead were released into the Columbia River and its tributaries this spring. The release was coordinated with water budget releases designed to create currents strong enough to help the fish downstream to the ocean. The water budget is a major component of the Columbia River Basin Fish and Wildlife Program. The water budget center is funded by the Bonneville Power Administration. The spring migration of fish was closely monitored to ensure that the fish traveled at a speed which closely matched their biologically-dictated timetable.

The Northwest Power Planning Council received a "Recognition of Achievement" award from the Washington State Chapter of the American Planning Association. The award was made for the Council's work in its "unique assignment" of coordinating both energy and fish and wildlife planning. Idaho Council member Robert Saxvik accepted the award on behalf of the Council.

Olympic athletes may get an extra spurt of energy thanks to improved air quality via the Northwest. The Bonneville Power Administration has made an offer of surplus firm power to California to help meet power demands during the games. The deal, which involves about 2000 average megawatts at 3.1 cents per kilowatt hour, would allow California utilities to shut down part of their gas and oil-fired generation this summer. This would eliminate some of the nitrous oxide which hovers in the Los Angeles air during the summer, particularly when automobile traffic is high due to tourism.

It may have been the biggest garage sale in the country. Components of the ill-fated Forked River nuclear plant went on sale in New Jersey. The auction included everything from pipe spools to giant steam generators. The plant was abandoned in 1980 by Jersey Central Power and Light Company, which had a 25 percent share. The company had spent $400 million after completing only five percent of the project. The accident in nearby Three Mile Island is considered a factor in the plant's demise.

MANAGING THE SURPLUS
THE MOVES ARE ALL OVER THE BOARD

by
Susan Skog

Managing an energy surplus may seem like an embarrassment of riches, but it's proving almost as tricky as managing a deficit to the region's utilities. Not only is there some disagreement over what moves to make, there is also considerable disagreement over how much faith to put in that surplus.

Saddled with the cost of power plants whose output isn't currently needed to meet regional demand, Northwest utilities are sizing up their power surpluses and sending signals throughout the Northwest as well as outside the region that there's power for sale.

Portland-based Pacific Power and Light Company (PP&L) has already made a long-term system sale of 70 megawatts and is interested in selling its share of the Colstrip 4 coal-fired plant in Montana. Moreover, the utility could contribute 400 megawatts to an out-of-region sale, according to Rod Boucher, PP&L's director of special projects.

Portland General Electric (PGE) is offering a 200 megawatt package for sale outside the region which includes power from part of its share of the Trojan nuclear plant and Boardman coal-fired plant in Oregon and Colstrip 3 in Montana. Dick Dyer, PGE's power supply manager, says the company is also offering to sell about 30 percent of its ownership in the intertie* connecting the Northwest and California.

Montana Power Company could support a 200 megawatt sale for five-to-seven years or a 100 megawatt sale for up to 25 years if the terms were right, according to Ervin Hedegaard, power operations manager. The company assumes that the Colstrip 4 plant will be operating by April 1986.

To further deflate the surplus, utilities are examining marketing programs to bolster electrical sales within the region. For example, PP&L soon hopes to introduce a program that would allow some of its customers to shut down wood-waste, gas and oil-fired generators by purchasing electricity to fuel them. Forest products companies such as Crown Zellerbach and Weyerhaeuser would be eligibile for the program.

Though these and other utilities recognize that the Northwest's long-term energy needs are still an enigma, they are banking on the fact that disposing of power now will provide short-term economic benefits to ratepayers which far outweigh any risks involved. But not everyone agrees. Others cast doubt on the current marketing effort and fear that, in their zeal to market temporary surplus power to ease short-term financial pressure, utilities may be taking actions that

Illustrations by Georgiana Nehl

will come back and haunt the region later in the form of higher rates.

In their haste to dump power in a "fire sale environment," Washington Power Council member Charles Collins fears that as utilities sell resources outside the region, they may be committing them far beyond the duration of the surplus. If that happens, the utilities could be forced to build new resources which would drive up electricity rates, Collins says.

He points out that in the March 1984 Pacific Northwest Utilities Conference Committee (PNUCC) forecast, a firm surplus of about 200 to 300 megawatts is projected for 1988-91. But PNUCC assumes WPPSS nuclear plant 3 will begin producing power in 1988-89. "Talking about a surplus in that environment is almost a misnomer," Collins feels. If the construction schedule for WPPSS plant 3 slips 12 months, the amount of surplus could also drop dramatically. The Hanford, Washington plant is 75 percent complete, and WPPSS is currently unable to borrow funds for completion.

Puget Sound Power and Light Company's senior vice president of operations, David Knight, implores other utilities to approach surplus sales with caution. "We may very well be substituting that power with higher cost (power) later. Is that prudent for the region? It's highly questionable in my mind."

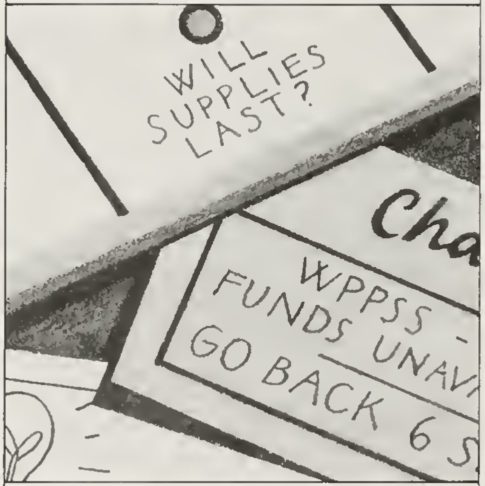
Knight sees only a five-year surplus in PNUCC's projections because a margin of 200-300 megawatts in the late 1980s can't be seen as a surplus in his view. "When you're talking about anything that small . . . losses alone could take care of that." Puget Power is the only private utility in the region which is not carrying a surplus.

Marc Sullivan, executive director of the Northwest Conservation Act Coalition, also has doubts about how solid the surplus is. "Our suspicion is that WPPSS 1 and 3 will not be completed and that therefore throws a lot of assumptions about the surplus into question."

PNUCC Executive Director Randy Hardy says PNUCC's recent forecast shows only three to four years of a substantial surplus, which indicates that a long-term sale to the Southwest could be risky. But no "massive" sales outside the region are planned, and the 1,500 megawatt, 15-year sale once contemplated has taken a back seat to discussions on the viability of a "capacity sale."

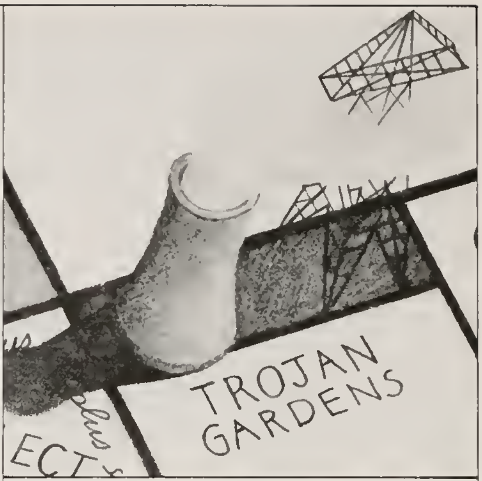
The region's utilities and the Bonneville Power Administration are now focusing on pooling their excess power in hopes of securing a 2000-megawatt capacity sale with California. Such a sale, which is regarded as a lower risk, would allow the Northwest to sell energy out of the region at peak hours or when electrical demand is highest.

This is when purchases are most valuable to the purchaser. The power would then be returned to the region in off-peak hours or when electrical demand is lower, as it would be at night. The sale could also be shaped to sell power out of the region in the summer and returned in the winter. The risk is substantially reduced because energy is returned to the region rather than sold permanently.



To avoid making some bad short-term economic decisions, we must dispel the myth that we have a "very large and unusual surplus," Collins says. "That's not correct . . . The problem is not the unusual amount of power. The problem is that it's expensive.

Normally, a power surplus is part of a healthy utility operating climate, he explains. But the problem with today's excess power is that it's largely concentrated in the hands of only a few utilities such as PP&L, PGE, Montana Power Company and the Pacific Northwest Generating Company.



PNUCC Load Forecasting Manager Gordon McDonald feels some utilities are accelerating their surplus sales efforts because they are "under enormous short-term financial and regulatory pressure. They have so little room to maneuver."

PGE's Dyer agrees that the company is selling its power to "improve the financial strength" of the company as well as to better manage the surplus in the region. Selling surplus power benefits ratepayers and stockholders and is a more productive use of the extra power, he believes. The company expects to have surplus power through the late 1990s.

Hardy acknowledges it's unfortunate that PGE is forced to sell its shares of its coal-fired units, but the company needs to be in a stronger financial position to better write off its share of WPPSS plant 3. He agreed that the financial stability of a utility must come first, even if it may have "detrimental, long-term consequences."

Surplus sales and marketing programs should be pursued now by PP&L because they'll reduce rates, Boucher explains. If the surplus disappears earlier than expected, "we can turn our marketing programs around to produce conservation programs."

The utility is also developing a "bank" of small, short lead-time resources — conservation, cogeneration and hydropower — that could be developed if loads rebound faster than expected. PP&L hopes to find potential small power developers, for example, who could be offered incentives to wait five to ten years to develop their project.

Boucher deflects criticism that the utility may be dumping power today only to turn around and have to build new resources to replace those sold. "We may be putting resources on earlier because of the sale, but it benefits ratepayers in the near term . . . Even if we have to install a large new generator to meet our total obligations, it may have to be installed anyway in the future." Installing new generation earlier will be less expensive, he notes.

The concern that utilities may build expensive new plants to replace power sold to California is inconsistent with current utility thinking asserts PGE's Dyer. Citing utility reluctance to construct new power plants, he says "it's going to be a while before you see any commitment to major resources in the region." All other sources of power will be used first, he adds. Boucher agrees. "If we've learned nothing else from the last several years, it's that we have to be adaptable. Long lead-time projects expose ourselves to risks."

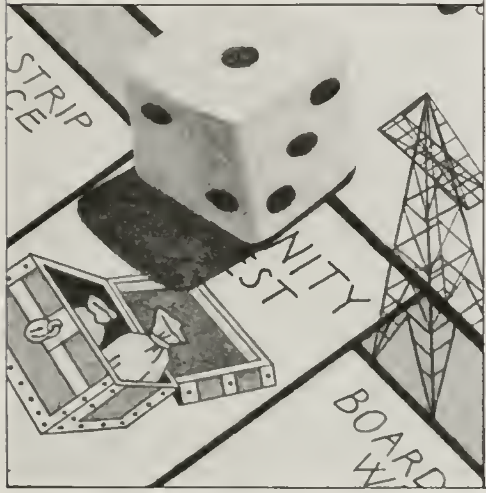
Montana Power's Hedegaard admits, "There's always some risk on any kind of long-term sale that towards the end of the commitment our own customers could have used the energy." But the company hopes to sidestep that risk by keeping its options open to develop new resources.

Collins counters that there's a "finite limit" to the amount of conservation and renewable resources that can be developed to respond to future loads if the region erodes its cushion of surplus. Once those resources are used, he fears utilities will turn to thermal plants.

In fact, Montana Power has plans for another coal-fired plant to come on line in the mid 1900s. If needed, the company could move construction up.

The Northwest Power Planning Council's power plan illustrates that 75 percent of new conservation must come from the agricultural, commercial and industrial sectors. Collins point out that utilities are focusing little attention on how that cheap conservation might be tapped.

PP&L is "working in the direction of developing expertise" in those conservation arenas, but it would be hard-pressed to justify spending a lot of money on conservation right now, Boucher insists. The company is testing the waters to see "what's out there" and will take advantage of the conservation available in these sectors, he maintains. "Thank goodness we have the opportunity to test these areas."



PGE is confident that if sales and marketing steps chip away at its surplus, conservation could be developed when needed "quicker than new plant construction," Dyer explains. "But no one needs to make that decision today."

Puget's Knight, however, cautions utilities to hedge their bets if they're planning on meeting future loads with new hydropower projects. Environmental constraints and the cost of new plants alone pose significant hurdles, he says. "When they say there's short-term hydro out there, I say 'wait and see.'"

If such uncertainty exists in the region, steps should be taken to increase the flexibility to respond to any forseeable energy future, Council Executive Director Edward Sheets stresses.

"It's doubly important when you've got some uncertain resources on top of an uncertain forecast that the region avoid locking itself into an intractable position." Sheets also believes the Northwest should avoid such mistakes as failing to adopt the Council's model conservation standards; failing to develop more expertise in commercial, industrial and agricultural conservation; and selling energy resources out of the region for their entire life.

The model conservation standards are "so much in the interest of utilities and ratepayers," but a "single-minded" concern about the surplus has triggered utility opposition to them, Collins believes.

PNUCC's McDonald says that if conservation and renewable resources don't pan out to meet all future loads, the region's private utilities can turn to Bonneville to meet their needs under the long-term power sales contracts they entered into in 1981.

But Bonneville may not be the cup that overflows with power that the utilities expect it to be. The agency predicts that it will be surplus until around 1990, but Power Supply Manager Walt Pollack says "that's simply one view of the future." If there's any change in the region's demand for power, the performance of existing resources or the schedule and amount of power received from new resources, the surplus is altered, he explains. "We can't be too deterministic about the duration of the surplus."

Utilities agree that it's impossible to predict when the region will cross over from surplus power to an energy shortage. But they feel they are positioning themselves to respond to whatever unfolds. Yet there is always the nagging concern that today's surplus may be just a mirage behind which hides a robust economic recovery — and a surge in electrical power consumption.

PP&L has learned "not to claim a great deal about the future," Boucher says. If the utility's learned nothing else, it's learned that it must be adaptable, he added. Likewise, there's a concern that underlies PGE's planning that "our forecasts may be as conservatively wrong now as they were on the other side of the pendulum 10 years ago." Dyer adds. The region made a dramatic swing away from energy deficits within two to three years largely because of economic effects, he said. "You have to ask yourself — could it go the other way?" ■

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* *The intertie is a transmission system permitting the flow of power from the Northwest to the Southwest, particularly California.*

Hazardous JOURNEY

by Carlotta Collette

In early May the author joined four Council members, members of the Council's fish and wildlife staff, Mark Maher and Chip McConnaha from the Water Budget Center (See **Northwest Energy News**, *vol. 3, #1, Jan/Feb, 1984), and Doug DeHart from National Marine Fisheries Service (NMFS) on a tour of the lower Columbia River dams to see the "water budget" in action.*

The tour began at the Water Budget Center in Portland, Oregon. The Center was set up by the Council and funded by the Bonneville Power Administration to coordinate management of flows for the spring runoff. The staff represents the Columbia River Basin tribes and the fish and wildlife agencies in the Northwest, with a water budget manager from each.

From the Center the group rode up the Columbia Gorge to Bonneville Dam, the first of the big federal dams to be constructed on the mainstem of the Columbia.

IF the dams on the Columbia and Snake Rivers and all of their tributaries had never been built, some other evidence of civilization would probably have intruded on the lives of the migrating fish in the Basin. Lumbering and agriculture were already taking their toll by altering or destroying fish habitat when the dams were still just a grand idea. The fisheries themselves, with their various sophistications, were causing the numbers of salmon and steelhead on the river to drop significantly. The fish were in trouble and, at the time, little attention was being paid to that fact.

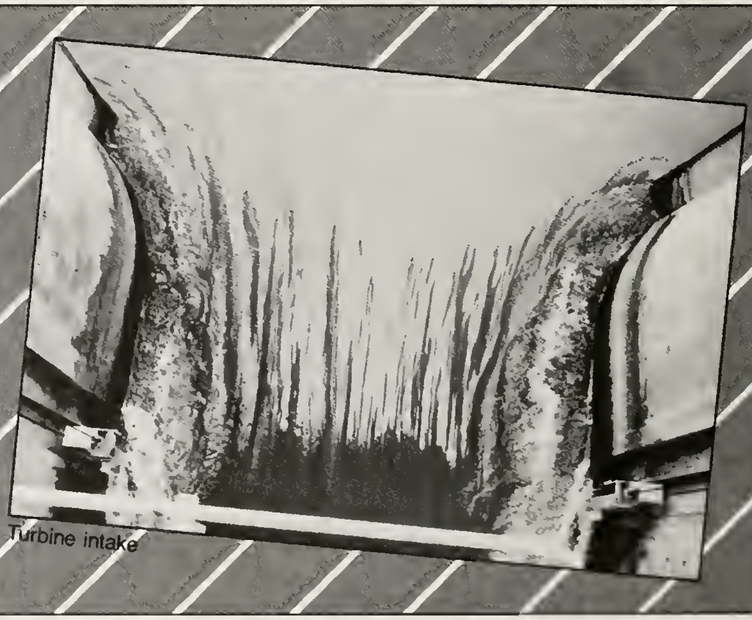
The dams accelerated the decline to such a degree that now there is some question as to whether some runs, such as the spring chinook, will ever be restored. Several stocks of upriver salmon, separated from their spawning grounds by high dams like Grand Coulee, are already extinct.

This year, upriver spring chinook salmon returns hit an all time low. The return last year was the previous record low. "While there are historically high and low cycles of returns of all the fish species," explained fisheries biologist Doug DeHart, "for the past 25 years it's been a straight downhill line." Unless action is taken now to protect the upriver spring chinook, from the time they hatch until they return from the sea to spawn, they will likely be our next extinct species.

The chinook crisis is one of the problems addressed by the Council's Columbia River Basin Fish and Wildlife Program. The "water budget" might be called the flagship of that program. The water budget is a designated volume of water that is released upriver at Grand Coulee, Dworshak and Brownlee dams in the early spring during the peak weeks of the downstream migration of anadromous fish. Because the fish are smolting (going through the physiological transformation that prepares them to spend the next few years in saltwater), they are under severe time constraints. They must make it down the river within a 30 day time limit. The released water is passed through the dams to speed the fish run to the ocean.

Before the Council adopted the water budget, the spring runoff was held in the reservoirs until the water was needed to generate electricity later in the fall and winter. This slowed the natural spring migration, resulting in the deaths of many of the young fish.

Even with the water budget, the trip down the river is a hazardous journey for the young salmon and steelheads. The water budget provides increased flows in the spring, but flows still go through the turbines. Diversion facilities intended to guide the fish away from the turning blades are in some cases inadequate. More than 15 percent of the run are killed at each dam by going through the turbines instead of into the bypass system.


Turbine intake

Photos by Carlotta Collette

following the spring runoff

With a run of, for example, a million fish, and eight dams to get through, only about 230,000 may make it to the ocean. And, that's with 15 percent losses; some dams have even higher mortalities. A few more will be lost within the bypass facilities, and still more will get picked off by predators who wait below the dams for the stunned survivors.

First, to Bonneville Dam

Bonneville Dam is 40 miles east of Portland in that part of the Columbia Gorge that is still mountainous and green. Further up the gorge the land smoothes out to rolling grasslands, but here at Bonneville the Cascades tower up on all sides.

Bonneville Dam has two powerhouses. The first began generating electricity in 1938. The second was added recently and began turning out power in 1981. Both powerhouses have fish bypass facilities that are close to state of the art.

They have special screens that deflect the fish heading into the turbines. The force of the water propels them up to a chute, known as the gatewell. From the gatewell they pass through orifices that flush the fish into collection channels inside the dam. The collection channels vary at each of the dams. Some are old sluiceways that were designed to remove ice and trash from the turbine intake. A few were bored in after the dams were operating.

The channels follow the length of the powerhouse and then lead rather circuitously to the downstream side of the dam, where the fish are poured back into the river. A sampling of the fish are sent first to handling stations where they are sedated, branded, measured and counted.

The guiding efficiency at each dam is that percent of the fish that are heading into the turbines but are "guided" instead into the gatewell and out through the fish collection channel. Recent monitoring at Bonneville Dam's No. 1 powerhouse suggest that about 75 percent of the fish entering the turbine intake are guided instead into the bypass facilities.

The second powerhouse, however, showed startlingly poor guidance efficiency. The new powerhouse was equipped with some of the best passage facilities available at the time of its construction. Yet, only about 23 percent of the young fish drawn toward the turbines are diverted into gatewells. The rest take their chances in the turbines where as many as one in five will be killed.

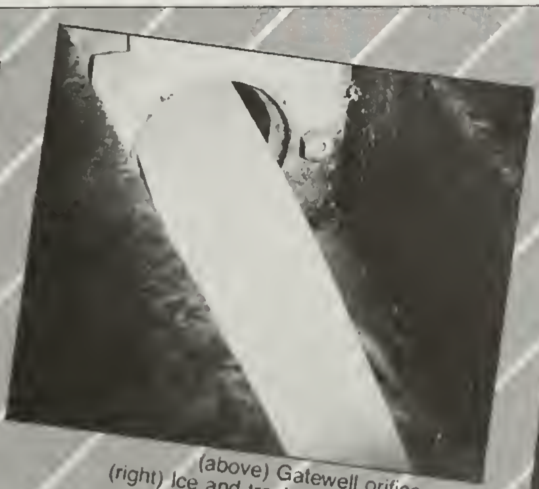
What makes diversion screens at the turbine intakes in each dam work at all is the usual rising of fish into the top 15 feet of water that flows toward the turbine. Good screens glean this top layer of fish, drawing them into the bypass channels without injuring them.

The problem at Bonneville's No. 2 powerhouse turned out to be a sand berm less than a mile upriver that alters the river's flow pattern and affects this fish stratification. At Bonneville, only about 50 percent of the smolts were found in those upper 15 feet of water. The rest were heading straight for the turbines.

Engineers figure it will cost between $16 and $30 million to dredge out that berm to get the $600 million powerhouse operating efficiently from a fish passage standpoint. Bonneville's No. 2 powerhouse is admittedly a unique situation, (although a similar berm exists at McNary Dam where a second powerhouse is being considered). The lesson, nevertheless, is still a valuable one: the fish and the river are not easily engineered.

Upriver at The Dalles Dam there is an old ice and trash sluiceway that runs the entire half mile length of the powerhouse. When the downstream fish migration is on, the sluiceway gates are opened and the fish are skimmed from the forebay (that part of the reservoir closest to the dam itself) and transferred through the ice and trash channel.

Submersible traveling screen



(above) Gatewell orifice outlet
(right) Ice and trash sluiceway with fish bypass flume overflow

following the spring runoff

From there they can be released downstream of the dam. Unfortunately, only about 40 percent of the fish approaching the dam make it into the sluiceway; the rest are drawn into the turbines, because there are no screens at The Dalles Dam to divert them.

Still further up the river where the desert-like arid landscape dominates, is the John Day Dam. Like The Dalles facility, John Day has no screening for the huge turbines. Until bypass mechanisms are completed (construction began this spring), spring migrating juvenile fish will make their way through the spillgates or through the turbines.

The water budget managers have ordered spills at John Day that begin just at sunset when the smolt quicken their journey, and the upstream adult fish slow theirs. Otherwise, the rush of water from the spillgates would confuse the fish trying to find the upstream passage entrance.

At McNary Dam, some 250 miles upriver from Portland, the whole picture becomes more complicated. McNary Dam has some of the most intricate fish collection and bypass fixtures of any of the river's dams. It is generally considered state of the art, and is the model for much of the improvement planned at other dams.

There are arrays of plastic and aluminum tubes and channels that resemble a plumber's nightmare. Salmon and steelhead are separated out at this dam. The salmon are conducted past the dam and back to the river. The steelheads are fed into a 12 inch tube that drops them into waiting barges or trucks for transporting downriver in the Army Corps of Engineers' "Operation Fish Run." When the fish are speeding through one pipe after another, crashing into corners and tumbling over each other on the separation table, the danger in handling the fish is apparent.

Fish handling: a digression

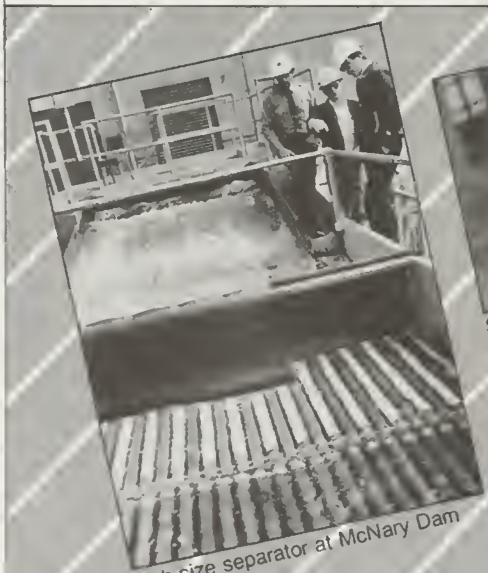
Probably the most difficult thing to observe in any tour of the dams, is the fish handling. Fish handling involves collecting a sampling of the fish, drugging them with a sedative to lessen the shock of the procedures, branding with liquid nitrogen, measuring and counting, and finally injecting a tiny metal stud in their snouts.

Even before they are handled, they are forced through conduits at incredible speeds. The Corps of Engineers once shot smolts out of a water cannon into a concrete wall to test their resilience. As it turned out, surprisingly few injuries were sustained as long as the smolts were surrounded by water.

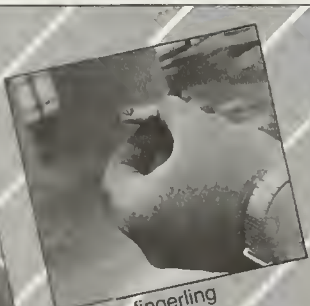
At another time, smolts were collected and beheaded for analysis. "In the past," explained biologist Chip McConnaha, "fish were taken at the dams, marked, counted, and then hauled back upriver so they could be dropped and monitored going back through the dam."

McConnaha admitted that handling the fish is still a problem, but improvements are being made in the process. "In designing our monitoring program we've essentially tied our own hands. It's a real sacrifice on the part of researchers, but we have two cornerstones in our work. We try to avoid nabbing the fish at the dams because they're actively smolting and are much more vulnerable then. Instead, we mark them at the hatcheries before they begin to smolt. The second thing we've done is adjust the number of fish we handle, even at the hatcheries. We need a good selection for our study, but we take less than we have in the past."

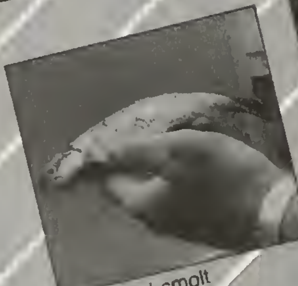
The Corps agrees that the less you handle the fish, the better. Jim Athearn, chief of the Walla Walla District's fish and wildlife operations, argued, "There's no doubt that if we had good spill and flow conditions every year, the water budget would be our best bet for getting fish safely down the river. It's inherently better because there's less handling."



Fish size separator at McNary Dam



Salmon fingerling



Steelhead smolt

Flumes for transporting fish at McNary Dam

Operation Fish Run

What Athearn is refering to, what spills and flows with bypass equipment is "inherently better" than, is the Corps' "Operation Fish Run." This is an alternative to the problems at the dams and the water budget that flows through them. Operation Fish Run collects the smolts at dams on both the upper Columbia and the Snake Rivers, transfers them to specially designed trucks and barges, and moves them around the dams, releasing them below Bonneville. Our party rode one of those barges, along with an estimated 27,456 smolts, from Lower Granite Dam on the Snake River, down to Little Goose Dam.

We met the barge at Lower Granite Dam and were shown the handling facilities there. Much like at McNary, the fish are collected and transferred through a complex maze of pipes and channels.

Because the salmon seem to suffer significant losses when transported (20 salmon mortalities to each steelhead death), and show almost no returns to their original spawning grounds later, they are, as much as possible, separated out from the steelheads. The easiest way to do this seems to be by releasing salmon and steelhead from the hatcheries at different times, so each of the runs is homogeneous. But, at the end of the season many of the stragglers of either species are collected together and transported.

That was the case on our barge. The sorter at Lower Granite was used only to cull out the rubbish and the few kelts (Steelhead who have already spawned and are returning to the sea are called kelts. Unlike salmon, steelhead don't always die after spawning. Some make the journey as many as five times.). We took on about 4,000 pounds of mixed species, of a possible carrying capacity of 50,000.

The barge took just under four hours to make it from Lower Granite, where the fish had been collected, branded, pegged with a tiny metal stud in their snouts and put onboard, to Little Goose Dam 37 river miles downstream.

Little Goose is not the pride and joy of the Corps' operations. Athearn explained, "What you see at Little Goose is not what we'd like to have. We're working at improving our operations there to bring them closer to what we have at Lower Granite." The bypass channel and collection systems have been improved considerably over the past few years, but collection and passage efficiencies are still low.

The picture overall seems somewhat bleak, but much less bleak than even four or five years ago. With the water budget and the past two years of good water conditions, the fish have stood a better chance of survival than in the past 20 or more years. The year 1983 was good for passing fish downstream. There's no reason to think 1984 will be any less so.

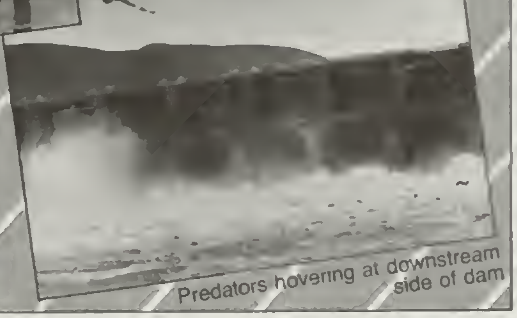
Still, it's much too early to say with any certainty that the runs are indeed improving, and if they are, the complexity of the Columbia River basin ecosystem makes it difficult to determine just what is causing the improvement. In good water years there's no question but that the water budget's artificial freshet moves the fish down the river faster and better than they have moved since the dams obstructed them. Providing adequate bypass equipment at each dam can bring survival to much higher levels than in the past.

But, in extremely low water years, when there will be argument as to whether there is water to spare for anything short of firm power requirements, "Operation Fish Run" will supplement the water budget flows.

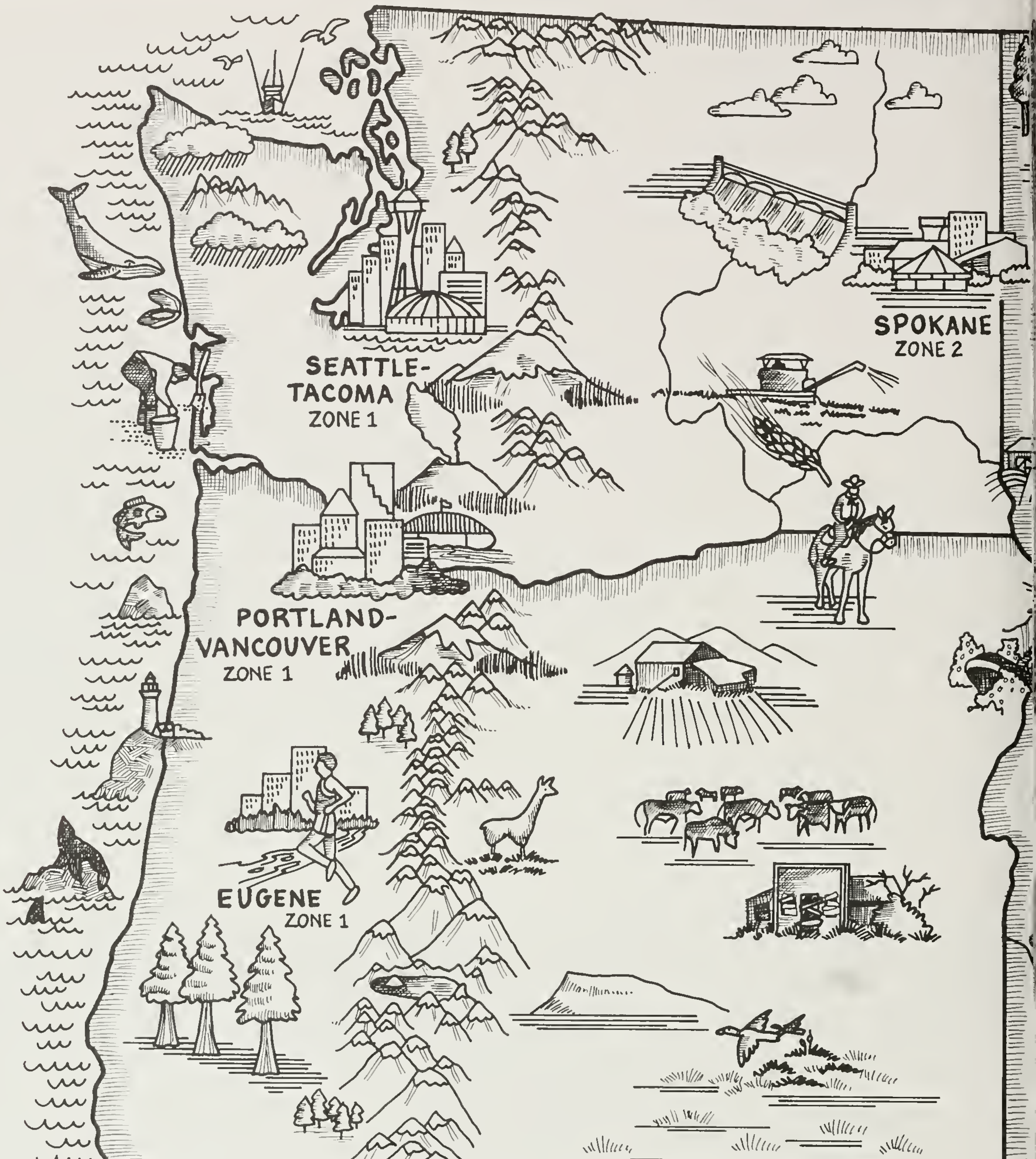
At the beginning of our water budget tour, Doug DeHart pointed out that there are now more chinook in the Sacramento River than in the Columbia. That should goad us on to bring back the runs that once were unsurpassed. ■

Sluiceway and bypass outlet

Fish transportation barge

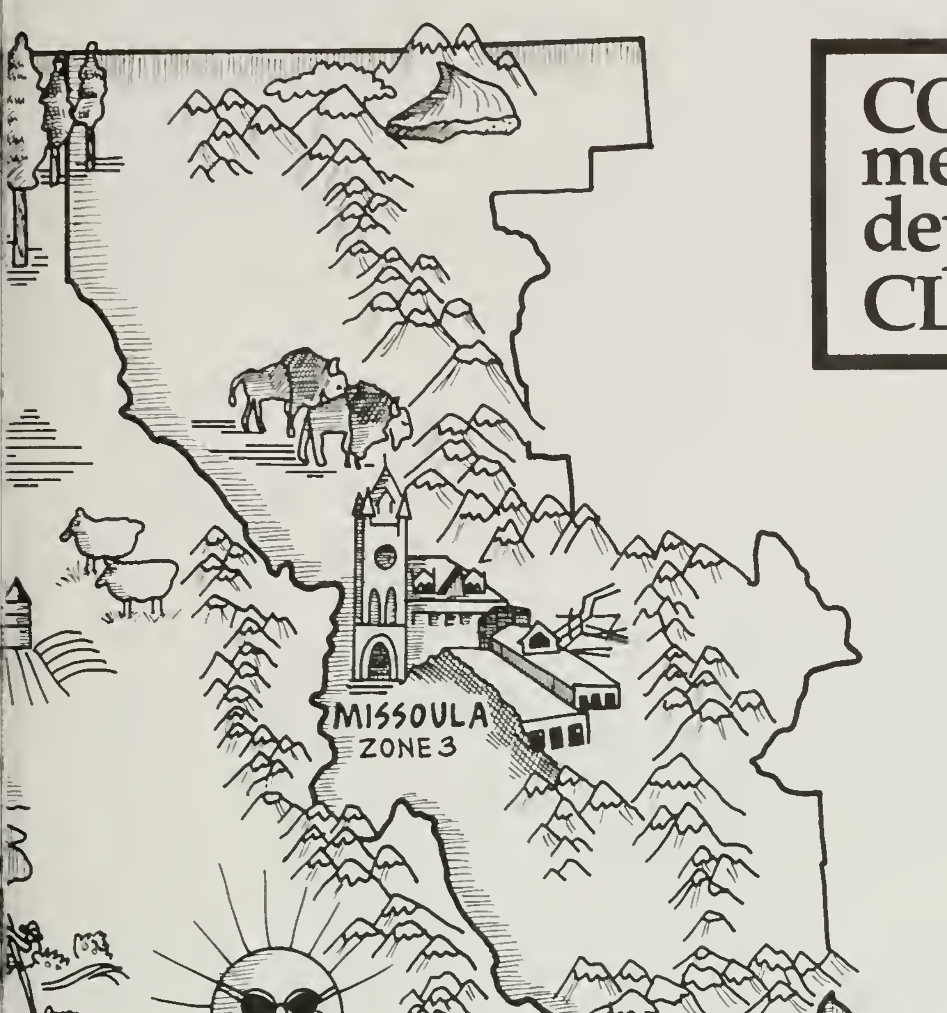


Predators hovering at downstream side of dam



FINDING YOU

Illustration by Linda Sullivan



CONSERVATION measures depend on CLIMATE

One of the basic questions asked about the Council's model conservation standards is "What zone am I in?" The standards, which set energy budgets for new single and multi-family housing, are designed to provide maximum cost-effective energy savings.

To do this, the standards take both climate and geographic conditions into account. For example, in **zone 1**, the energy budget is 2.0 kilowatt hours per square foot per year for single family units and 1.2 for multi-family units. This zone encompasses most of the mild marine climate west of the Cascades and includes the coastal and lowland areas of Washington, Oregon and southern Idaho.

In **zone 2**, the energy budgets are 2.6 and 2.3 for single and multi-family units, and in zone 3 they are 3.2 and 2.8 respectively. Zone 2 is the more extreme climate east of the Cascades such as the high plateau areas of eastern Washington and Oregon and much of Idaho. **Zone 3** includes the mountainous areas of Idaho and western Montana.

The zones are based on heating degree days as determined by the U.S. weather service. Heating degree days (HDD) are the average degrees per year it takes to bring the daily temperature to an "ideal interior temperature" of 65 degrees. The zone 1 range is 4000-6000 HDD; zone 2 is 6000-8000 HDD; and zone 3 is 8000 or more HDD.

The map indicates the zone for the region's major population centers. Most smaller communities will be in the same zone as their nearest metropolitan neighbor. If, however, you do not know which zone you are in, please feel free to contact the Council's Public Information and Involvement Division (see central office address phone inside front cover). ■

R ZONE

When Congress authorized construction of Grand Coulee Dam on the Columbia River, its goal was to harness an existing resource for the benefit of the Northwest. On June 1 of this year, a major step was taken toward an energy resource of similar potential. On that date, the City of Tacoma enacted new energy efficient building codes based on the Northwest Power Planning Council's model conservation standards (MCS).

While Tacoma's early adoption of building codes which reflect the standards is a less dramatic gesture, the codes may indeed turn out to be the Grand Coulee of the future.

This analogy was coined by Council member Kai Lee (Washington), when he said, "What Tacoma's early adoption of the code signals is the Grand Coulee Dam of the future. Tacoma will have a housing stock in the 1990s that will serve as a reservoir of power that can be drawn on for years to come." Homes built to model conservation standards are projected to save 60 percent of the energy required to heat a comparable home built to today's standards. These energy standards will continue through the 50-to-60 year life of the homes.

Tacoma is the first city in the region to adopt the Council's standards and in doing so has shown what many consider remarkable foresight. "As we looked at our power needs over time, says Mayor Doug Sutherland, "we saw the need to adopt the MCS in order to keep our rates as low as possible."

Benefits of Tacoma

What makes Tacoma's adoption remarkable is that the city has among the lowest rates in the region — and probably in the country. On the surface, Tacoma might seem to be an unlikely candidate to adopt stringent conservation measures. But as Council member Lee points out, "Tacoma is locking in the benefits of low-cost power that have been the foundation of economic growth in the region."

This will be important to electricity-intensive industries such as Tacoma's two pulp and paper mills, a copper smelter, a petroleum refinery, and two chlor-alkali plants. These industries, along with the direct service industries such as the aluminum companies, form the economic base of Tacoma and the area. Their survival depends upon the availability of competitively priced power.

Ratepayers in the Tacoma area will benefit from adoption of the standards in two distinct ways. Tacoma currently purchases about half its power from the Bonneville Power Administration (which includes costs from WPPSS plants 1, 2, and 3) and generates the rest itself. Power purchased from Bonneville costs Tacoma almost four times that which the city generates itself.

By adopting the standards, Tacoma will reduce its overall future requirements from Bonneville, a protection from future rate increases. By adopting the standards now, Tacoma also ensures the continuation of low-cost power — and for a long time. Ratepayers will also be spared the surcharge (10 to 50 percent) that can be tagged on to Bonneville power sales starting January 1, 1986, for jurisdictions which have not adopted the model standards or similar measures.

Tacoma's efforts will benefit the region as well. Not only will the region gain in the long run from savings in rates due to lower load demand on Bonneville, but the region will be able to learn from Tacoma's experience in implementing the standards.

To help Tacoma deal with the "overwhelming details" of implementation and enforcement, Bonneville has prepared a support package of approximately $2.5 to $3 million. The agency points out Tacoma's unique position because it is the first in the region. Other jurisdictions will likely receive a lower level of support. "We feel that Tacoma has taken upon itself all the risks and uncertainties of being a pioneer," says Bonneville's Sydney Berwager, "and we feel the lessons we learn here will be of great value to the region."

Another benefit of the Tacoma experience is the fact that the standards were adopted in both the city (effective June 1) and for all parts of Pierce County that receive electricity from Tacoma City Light (effective October 1). "This experience with both approaches could prove valuable to others in the region," says Berwager.

The support package itself has four main components — compliance, information, marketing, and incentives.

Compliance

A separate compliance unit will be created within the city building code division to deal exclusively with code-related enforcement. "We'll train five people to start," says Jacob Fey, energy conservation coordinator for Tacoma's city energy office, "and add more as the need develops. We want to do a high quality job."

He adds that "At the moment we don't know the exact work load — how many building permits will be taken out and for what kinds of things. Based on construction starts in previous years, we could have about 1,000 single family and 300 to 400 multifamily units. We'll also have conversion standards to work with and last year we had between 200 and 300 conversions to electricity." Under the new code, homeowners must, at their own expense, retrofit their structures to comply with a conversion standard before they can convert to electricity.

Information

An information unit will provide assistance and training to the shelter industry regarding the requirements of the model standards. This unit will have a computer

Tacoma Mayor Doug Sutherland

by Mickey Riley

TACOMA

Pioneer in conservation

system that will keep all records on such details as the characteristics of the buildings and, eventually, their energy consumption. Fey adds, "We'll also have a compact computer so we can take the program to people and save them a trip to City Hall."

Marketing

A special marketing program will be provided for consumers and builders "to give that marketing boost we think these homes require in the interest of regional conservation and the efficient use of electricity," states Berwager.

Incentives

Approximately $1.8 million will be available as incentives for builders. The details of this are still being negotiated, but Fey expects that the incentives will start at somewhere close to $2 per square foot plus the cost of the air-to-air heat exchangers. "We will probably start at that figure with a drop every three months, depending on the number of starts," he says. "Of course, the early builders will get more, but we feel it's worth more to the region in terms of gaining experience."

Each component of Bonneville's support package will provide the region practical field experience with the mechanics of implementing the model standards. Described as the cornerstone of the Council's power plan, the standards project energy savings of approximately 1,400 average megawatts by the year 2002 under the Council's high growth forecast.

Tacoma's early adoption begins the realization of those energy savings and of the Council's one-year-old plan. "The force of the Council's plan won't come out of the law," says Council member Lee, "it will come out of recognition that cooperation among the players is in everyone's best interests. Tacoma is the first hint of that cooperation." ■

Photos by Scott D Baker and Steve Nehl, courtesy of The Oregonian

THE new AMERICAN DREAM

by Susan Skog

Once the American dream of owning a home prompted visions of a white picket fence, priscilla curtains at every window and a spacious back yard in which the kids could frolic. Today, with ever rising heating costs, energy efficient features are beginning to edge out these romantic notions of what a new home should have.

This month, Dan and Janet Drew of Twin Falls, Idaho, will play out a modern-day version of the American Dream when they move into their new "cottage style," three-bedroom, two-bath home, which also happens to be the first energy-efficient home completed in the region under the Residential Standards Demonstration Program (RSDP). The home is one of a wave of new homes being constructed to the Northwest Power Planning Council's model conservation standards in Idaho, Montana, Oregon and Washington, illustrating the benefits of energy-efficient homes.

Builder Lyle Frazier in front of new home.

Ann Orzepowski photo

The energy efficiency of their new home came as a surprise to the Drews, but it helped tip the balance in their decision to purchase the home, according to Dan Drew. "This winter, we're looking forward to seeing how well it performs."

The maiden demonstration home, or "Energy Wise" home as it's called in Idaho, should reap dramatic energy savings for the Drews. If constructed to today's standards, the 1,288 square-foot home would cost about $400 a year to heat. The Drews can expect to pay about $155 a year for electrical space heating, according to Steve Payne, energy program specialist for the Idaho Department of Water Resources, which administers Idaho's RSDP effort.

The home features extra thick insulation and a continuous vapor barrier to block heat loss in the winter. Twin Falls builder Lyle Frazier of Raintree Enterprises, Inc., installed R38 insulation in the ceiling, R27 in the walls and R27 in the floor above grade and R19 below grade. (The R factor represents the resistance to heat loss.) The home also has triple-pane windows and a heat exchanger.

Frazier hadn't expected to blaze any trails in completing his home, but was pleased he was the first builder to make it to the finish line. The last nails were pounded and final rolls of carpet were laid in early May. After appearing in the local "Parade of Homes," the house was sold within five days.

Idaho completes the first demonstration home in the region.

With such a whirlwind schedule, it would be understandable if Frazier took a break. Instead, he hopes to continue his participation in the demonstration program by building what's known as a "matched pair," which includes a home built to the Council's model standards and a similar home with the same orientation to the sun built to current practices to compare the energy costs.

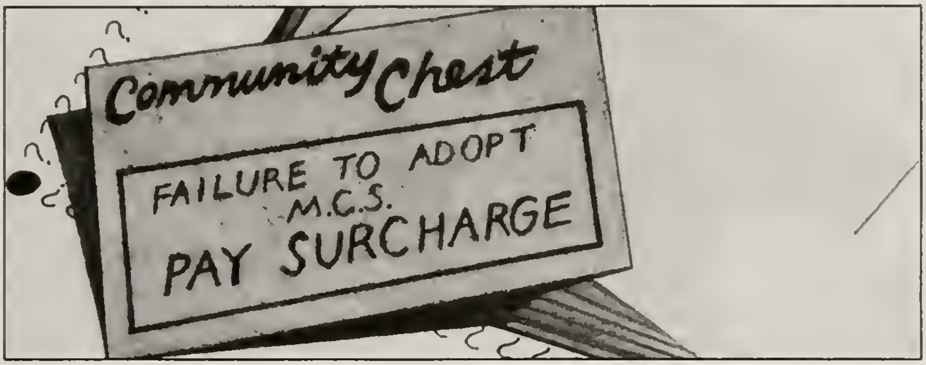
Frazier jumped head first into the Energy Wise program in Idaho because he said he "likes to be involved from the inside," and he wanted to know what could be done to construct a better insulated home. Builders participating in the demonstration program are reimbursed for the additional construction costs incurred in building energy-efficient homes. Funding is provided by the Bonneville Power Administration.

Frazier equates the benefits anticipated from the demonstration program to the positive "spinoffs" that have come from the nation's space program.

One spinoff which he hopes will take place is better access to smaller heating devices, such as furnaces and heat pumps, needed in the energy-efficient homes. Frazier hopes the heating industry will respond with smaller units. He installed a five kilowatt furnace at the Drews' home, which normally would have required a 15 kilowatt furnace, and could have used a smaller one had he been able to find a supplier.

Ironing out these equipment wrinkles will help to lower the cost of future demonstration homes, Frazier feels. While the Drews' home cost more to build, these costs could be greatly reduced in subsequent Energy Wise homes as more experience is gained with the construction techniques, according to Water Resources' Payne. ■

MESSAGE CLEAR ON SURCHARGE


Community Chest
FAILURE TO ADOPT M.C.S. PAY SURCHARGE

by Jim Nybo

In the year since the Northwest Power Planning Council adopted the regional energy plan, few topics have generated the interest, confusion and controversy that surcharges have. At its May 16 meeting in Helena, Montana, the Northwest Power Planning Council made clear its position on surcharges. For those areas which fail to adopt model conservation standards by January 1, 1986, the Council clearly recommends surcharges.

The Northwest Power Act states that a recommendation to impose surcharges requires a majority vote by members of the Council. In Helena, the Council publicly stated that this action had been taken when the Council adopted the plan and that no additional action by the Council is necessary for the Bonneville Power Administration to impose surcharges. Further, any purchase of power from Bonneville by an electrical utility is potentially subject to surcharge, including purchases of firm power and exchange power.

The Act provides that the Council may recommend to the Bonneville Administrator, and the Administrator may then impose, a surcharge on Bonneville's power sales. Surcharges are to be imposed on that share of a utility's load where a state, political subdivision, or utility has not adopted the Council's standards or comparable energy-saving measures. It sets the level of surcharge at 10 to 50 percent of the power sales rates. Under the regional plan, failure to adopt the model conservation standards for new electrically-heated residential and commercial buildings, or for switching from some other fuel to electric heat in existing residential and commercial buildings by January 1, 1986, would subject a utility to surcharges.

The purpose of the surcharge is to recover additional costs incurred as a result of not achieving the projected energy savings from the conservation standards. In the Act, Congress told the Council to develop a methodology for determining the surcharge rate. It can be found in Appendix D of Volume I of the Council's power plan.

Members of the Council also emphasized that surcharges are recommended in the Plan even during a period of electricity surplus. The model standards are a long-term resource, extending well beyond the expected surplus period, and must be adopted now to avoid a major lost opportunity, according to the Council. Washington Council member Kai Lee said there has been a tendency for actors to engage in "a convenient misunderstanding" about the effect of failure to adopt the standards on utility rates. Lee said that some utilities seem to resent local governments getting into their bailiwick. Acknowledging that the standards have the potential for major economic impact, Lee pointed out that the standards have a sound basis and are the "economically rational thing to do."

Montana Council member Gerald Mueller noted that there is a good rationale for adopting the standards now, even with the surplus, because the surplus could end very rapidly, and in any event, no one expects it to last the 50 to 100 year life of buildings built today. In expressing his firm support for the standards and the surcharge recommendation, Mueller said, "I won't change my mind unless someone can bring new factual information that the standards are not the good deal I think they are."

The Act and the Plan do not address the matter of how the surcharges are to be passed on — whether to all utility ratepayers, only those ratepayers in the non-adopting areas, or to utility shareholders. For example, a utility buying all its power from Bonneville and serving a large area where one small jurisdiction failed to adopt the standards might have only a small share of its load surcharged.

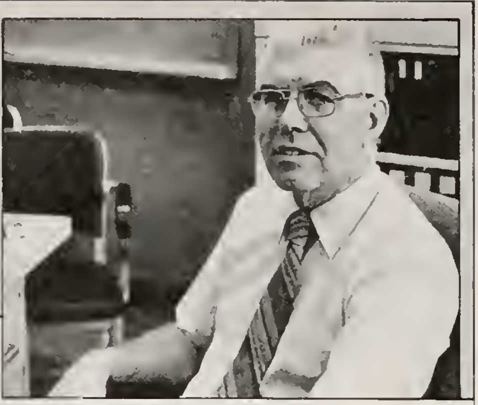
On the other hand, another utility purchasing only a small share of its power from Bonneville, might have all of its service area fail to adopt the standards. Who ultimately pays the surcharge would presumably be a matter for the utility or a regulatory body to decide.

The general contract provisions of the power sales and power exchange contracts between Bonneville and the utilities give Bonneville the authority to impose a surcharge under the Act and express Bonneville's intent to adopt a rule for imposing surcharges. The next major step is Bonneville's development of a conservation surcharge policy, which, according to the agency, was intitiated in February and will culminate in May 1985.

In sum, then, the regional Council has sent a message that it is serious about surcharges. Surcharges have been recommended by the Council; the methodology for calculating surcharges has been developed; surcharges apply to the Council's model conservation standards; surcharges can be applied not only to firm power purchasers, but also to exchange power; and Bonneville has initiated a process to adopt a rule for imposing them. ■

BPA's Larry Dean

Conversation with an energy salesman



Carlotta Collette photo

How has Bonneville changed since you've been with the agency?

In the first ten years you could see Bonneville becoming more regimented, more of a government agency. When I first came here, when you saw something that needed to be done, you went and did it. That's changed.

The public image of Bonneville was excellent then. It was for many years. Bonneville was looked on as someone who brought good things to the region. Low cost power and industry. With the increase in our rates, we're perceived that way less and less. It used to be wonderful to be able to introduce yourself as a Bonneville employee. Now, it may or may not be good.

I think the change is all due to our rates. We had such advantageous rates for sale to utilities that resold our power, and to industries. Now, the various factors that you and everybody else know about have caused that to change. Our rates have increased very rapidly, which is very bad from a public perceptions standpoint. Even though they're still lowest in the nation, the people who buy the power know how much the rates have changed. Some of them know how that compares to the rest of the country. Some don't.

Don't you think that the transition from a hydropower system to a thermal system affected people's view of Bonneville?

That never really happened. In our short and medium range objectives in this division we kept saying that we had to prepare to operate a mixed hydro and thermal system, but Bonneville's generating system is still almost completely hydro.

That's curious because the public perceives Bonneville as responsible for bringing nuclear power to the Northwest . . .

Of course, I'm speaking from my own viewpoint where we're trying to operate the existing resource. WPPSS plant 2 generated for the first time last month. That was a very big milestone, but it hasn't yet changed the balance of hydro and thermal generation in our system.

We're marketing the Hanford generating project and WPPSS 2, plus 8 percent of Centralia, 30 percent of Trojan and 10 percent of Boardman. That's how much thermal is coming into our system. Excluding WPPSS 2 which is not yet commercial, that amounts to only 1370 megawatts of thermal generation capability out of 23,368 total megawatts. It's not a large part of our operating regime.

Can you provide a nutshell overview of how the power system operates?

In simplest terms, it's a matter of matching generation to load, either in one-second intervals, which is what the computer system in the dispatch center does — it takes a reading every second and changes the generation a little bit so it matches the load — or in longer intervals — like a minute, an hour, a day, a year. In general, our job is to make sure generation is matched to load over all those time intervals. In our organization we're responsible for planning up to the length of the critical period in the future, which is almost four years.

by Carlotta Collette

Is that projected load and projected generation?

Right. There are 30 federal hydro projects and the pieces of those thermal projects I mentioned. Those are the resources marketed by Bonneville. We keep the sum of those generating resources matched to the net power we're selling at all times.

Do you end up generating more than you'll need so you'll have some flexibility?

No. Electricity is an interesting commodity. The amount we're producing has to exactly match the amount being consumed at all times.

So what do you do in time of a surplus, like now?

Power is still being consumed instantaneously. Some of it's being transmitted over power lines to other regions and other utilities.

How does the proposed long-term firm power sale to California fit into the picture?

The region has a surplus of generating capacity that is projected to last at least 20 years, and a surplus of firm energy projected to last about seven years. As long as those surpluses remain unsold, they will have an adverse impact on power rates in

At the Bonneville Power Administration, Larry Dean is the man who directs the people who coordinate the Columbia River System. They buy and sell power to meet loads. They link federal generating plants, capable of generating 23,000 megawatts of power, with non-federal plants in the region's electricity operation.

"It's a really interesting job," Dean mused on the Friday afternoon of this interview. "It involves all the utilities and all of the water operating entities in the region."

Twenty-eight years with Bonneville have afforded Dean the view of an institution in transition.

the region. The proposed sale to California is an attempt to sell those surpluses and thereby to help hold power rates down.

A year ago, the region's utilities were looking at a long-term sale of firm energy. However, it appeared that the region might have to add new resources to support such a sale.

The present thinking is an arrangement whereby Bonneville is acting as an agent for the Northwest sellers. This is to emphasize the sale of the region's long-term surplus of generating capacity and its declining surplus of firm energy. Since the region already has a surplus of these commodities, it will not need to add new resources to support such a sale. After the energy surplus runs out, we would sell only the generating capacity, but we would not be obligated to deliver energy to California.

The arrangement now is that they get to take power during the daytime, the Monday though Friday daytime, when their loads are heavy. Then at night and on the weekends, they return the energy that was delivered. We've been delivering power like that to California ever since the Intertie was constructed in 1968. It's a commodity of real value.

You're saying that we have the equipment to generate the power, but we don't have the water to operate the equipment?

Right. We don't have the water to run the generators all the hours to meet the Northwest energy load. That still leaves the generators available, but without any water or any energy to go with them. The ability to use those generators is a valuable commodity.

Almost every region in the United States is adding generating facilities just to supply capacity. That includes California. Essentially what this present concept of the California sale amounts to is another level of coordination between the Northwest's hydro-based energy system and California's thermal based capacity system. California's utilities are expanding their generating system based on capacity needs, and we're expanding ours based on energy needs. That leaves us some capacity to spare.

We also have a short-term firm energy surplus, and we'd like to sell some of that to California to help keep Bonneville's rates from going up.

How does the water budget figure into this? Does it diminish our capacity or just reduce the amount of energy we have?

The water budget dedicates some of the firm energy from the hydropower system to help get the anadromous fish down the river in the months of April, May and June. The loss of firm energy was originally estimated at about 550 megawatts. By moving some of the WPPSS 2 plant maintenance into those spring months, we're able to use some of the "fish-flow-energy" to meet firm loads. That has cut the loss of firm energy from the dams due to the water budget to about 385 megawatts.

How has the Council's Power Plan and Fish and Wildlife Program affected your work?

They have had a lot of effect on the kind of things that we do. Certainly the parts of the Fish and Wildlife Program that have anything to do with river operations, water supply, or reservoir levels have an effect on what we do. Their planning for firm power resources certainly affects the work we do because we're arranging to sell power under contracts that reflect the resources that are provided in the Plan. That Plan will have even more of an effect on our work as time goes on.

How does that feel?

Well, if it wasn't the Council making these kinds of decisions, someone else would be making them. If not Bonneville, then maybe PNUCC. Someone had to do it.

What Council decision had the greatest impact on your activities?

One decision that we at BPA had to struggle with for years, was how to handle the spring fish migration. That decision was much bigger in scope than either I or Bonneville had the capability of dealing with.

There was no reasonable resolution to that problem that was all the way in the direction of one interest or another. It had to be a compromise. I do not believe that BPA was in a position to make that compromise. We didn't know how far to go, and no matter how far we'd go it wouldn't have been far enough to suit some interests.

When the Council came up with all of its public input process and made a decision and issued its Fish and Wildlife Program, that settled that issue for us. Now all we have to do is follow the Fish and Wildlife Program. From that standpoint the Council provided guidance that was sorely needed, you might even say, appreciated.

On the electric power planning side, if the Council had not played that role, someone else would have, but that was not true on the fish side. There was no one able to do this. Absent the Act, who knows what would be happening now. ■

The following provides a brief synopsis of the amendments proposed for addition to the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program. For a copy of the actual draft amendment document, which includes the complete amendment language for amendments proposed for addition and deletion, use the order form in this issue.

With one exception, the amendment briefs are presented in the order they would appear in the program – from section 100 on. The exception is the five-year action plan which would, if accepted in the final adoption, become a new section to the program.

FIVE-YEAR ACTION PLAN

The most substantial change to the Fish and Wildlife Program being proposed is the addition of a five-year action plan. Currently the program contains more than 220 actions to be implemented by various agencies in the Northwest, and an additional 100 may be added through this amendment process. As it now stands, the program provides little guidance on the sequence in which these actions should be completed. This guidance is needed as some actions are more urgently needed than others or depend on others being completed first. The proposed action plan would provide this guidance.

This action plan also provides the Program with two priority interim goals. The first is to increase the production of salmon and steelhead in the Columbia River Basin by improving fish passage facilities at the major dams on the Columbia, and concentrating on the water budget flows model hatchery facilities, the Yakima Basin enhancement project and selected hatchery improvements. The second goal is to protect the ratepayers' investment in the program. This will be accomplished through evaluations of projects, funding limitations, and establishing long-term program goals.

SECTION 100: INTRODUCTION

The introduction to the program describes the purpose of the program, how the program was developed, and the Council's role. It also addresses the rights which must be honored (such as Indian treaties) as well as program costs and funding sources.

Summary of changes. The only changes proposed in this section correct technical inaccuracies and do not alter substance.

SECTION 200: PROGRAM GOALS

This section of the program establishes an anadromous fish study to identify losses due to hydroelectric development and to set goals for restoration of specific stocks at specific sites.

Summary of proposed changes. One proposed change is a technical alteration to update the program to reflect a delay in the goals study. Out of date deadlines were removed. Another change would set standards for the Council to review new resident fish projects in lieu of a resident fish goals study. A third change reflects a Council proposal to evaluate its use of the Fish Propagation Panel, an advisory committee to the Council.

SECTION 300: ANADROMOUS FISH: DOWNSTREAM MIGRATION/ WATER BUDGET

This section of the program establishes a water budget to help fish during the critical spring migration period between April 15 and June 15. A water budget is a block of water that can be "shaped" to increase spring flows, thus creating an artificial freshet. This section sets up a water budget center and water budget managers.

Summary of proposed changes. One change is a minor date change. The other calls for Bonneville to fund water budget policy meetings to coordinate tribal activities.

SECTION 400: ANADROMOUS FISH: DOWNSTREAM MIGRATION/ PASSAGE

This section of the program calls for interim spills and improved collection and bypass systems using conventional screens to prevent death and injury to fish caused by turbine blades and pressure changes. It also calls for research on predation and mortality.

Summary of proposed changes. One amendent transfers funding responsibility from Bonneville to the Corps for facilities at John Day Dam. Other amendments update the program to reflect that evaluations by the Corps called for in the original program have been completed at The Dalles, Lower Monumental, and Ice Harbor dams. New actions are called for. Other amendments focus on studies.

SECTION 500: ANADROMOUS FISH/OCEAN SURVIVAL

This section of the program addresses the problem of overfishing and indiscriminate harvest of stocks in the ocean. Measures call for consultation and coordination among groups with jurisdiction over coastal waters and with fish and wildlife agencies and Indian tribes. In certain instances, funding of facilities is tied to the imposition of adequate harvest controls.

Summary of proposed changes. Several proposals deal with escapement, the ability of fish to elude capture and return to spawn. Amendments call for escapement goals consistent with the goals to be established under Section 200, regulation of tributary fisheries to protect rearing and migrating juvenile fish, and annual reports on how escapement objectives are met. One amendment calls for a state-of-the-art technique to monitor fish stocks called electrophoresis. It would allow greater protection of weaker stocks. Other proposals remove restrictions tied to harvest controls for a Yakima Indian Nation hatchery and acclimation ponds at John Day. These are addressed more fully in Section 700.

SECTION 600: ANADROMOUS FISH/UPSTREAM MIGRATION

This section of the program provides measures to improve water levels, flows, and fishways to help adult fish migrating upstream to spawn. Measures call for determining optimum flows, spill guidelines, and improved fishways. Studies of passage problems, improved data collection, and assessment of spawning and rearing areas are part of this section.

Summary of proposed changes. Changes in this section were minor. One transfers funding responsibility from Bonneville to the Corps, and another updates the program by deleting a reference which calls for feasibility studies which have already been conducted.

SECTION 700: WILD, NATURAL AND HATCHERY PRODUCTION

This section of the program emphasizes the restoration of wild and natural fish stocks which are genetically stronger than hatchery fish. Measures call for improved flows at spawning and rearing grounds, water temperature controls, and habitat and passage improvements. Measures also call for a survey of sites for hatcheries and fish releases. The program gives priority to improving existing facilities over building new ones.

Summary of proposed changes. More recommendations were received for this section than any other. Proposed changes emphasize the importance of gene conservation and include new offsite enhancement projects. They also would set a spending level for Bonneville funding of habitat and passage improvements. An existing measure for water temperature controls at Dworshak Dam is proposed for deletion, while a new measure would call for evaluation of the area below the dam for fish production. More specific language is proposed to clarify measures on hatchery effectiveness, genetic stock assessment, and disease and smolt quality. The language would give more specific directions to Bonneville. Other proposed amendments would remove restrictions to building a Yakima Indian Nation hatchery and John Day acclimation ponds. The Yakima hatchery, which has been designated a "model hatchery," may not produce fish that are subject to inadequate fishery controls. Approval of permanent ponds at John Day

Action plan highlights F&W amendments

will be conditional on the effectiveness of the temporary ponds. Other suggested changes reflect a Council proposal to evaluate the role of the Fish Propagation Panel, an advisory committee to the Council.

SECTION 800. RESIDENT FISH

Like anadromous fish, resident fish also have been threatened by hydroelectric development which has created changes in water flows, levels, and temperatures. Natural habitats have been altered reducing access to food and increasing vulnerability to predators. This section of the program sets flow requirements, temperature controls, and limits drawdown at specific reservoirs. Measures also call for streambed protection and other restoration work as well as studies and research.

Summary of proposed changes. Key changes in this section call for more indepth research on the white sturgeon and Bonneville funding of a hatchery on the Colville Indian Reservation. More minor changes transfer the source of funding, clarify the reason there are no anadromous fish in Montana, and simplify language relating to research in the lower Clark Fork drainage. Other measures call for Bonneville to fund research and studies, rearing pools, and enhancement activities. A final amendment calls for specific parties to consult over irrigation water releases.

SECTION 900: YAKIMA RIVER BASIN ENHANCEMENT

Competing demands for water have taxed the water supply in the Yakima Basin while outdated or nonexistent passage facilities have blocked migrating fish. The Yakima Basin projects are high priority projects because, while the problems are extreme, the potential for solving them is high. The program calls for water conservation and storage, correction of passage problems, and establishment of minimum flows.

Summary of proposed changes. The original program language is very specific in its requirements for improving fish passage problems. The amendments provide more general language to allow greater flexibility in design with appropriate oversight by the agencies and tribes. Other amendments make technical corrections without altering substance.

SECTION 1000: WILDLIFE

The lakes created by the dams inundated natural shoreline habitats, and development stripped other habitats of vegetation and increased harrassment and predation. The program requires that wildlife interests are represented in planning and stipulates mitigation status reports. It also calls for studies of the effects of power transmission corridors on wildlife and directs the acquisition of compensation lands where necessary.

Summary of proposed changes. The proposed amendments rewrite measures in the original program to clarify the transition from planning to implementation of wildlife activities. The amendments call for more consultations, studies, and Bonneville funding. Others set criteria for land acquisition; add four new projects at Dworshak Reservoir; direct a study of deer losses due to Grand Coulee Dam; and establish an onsite survey within the Gorge to identify wildlife, habitat, and enhancement opportunities.

SECTION 1100: ESTABLISHMENT OF A FISH AND WILDLIFE COMMITTEE

This committee was established to oversee implementation and develop research objectives for the program.

Summary of proposed changes. There were no amendments proposed for this section.

SECTION 1200: FUTURE HYDROELECTRIC DEVELOPMENT

In order to protect fish and wildlife in the future, the Council set conditions for future development and required that permits for new development be reviewed for potential impacts on fish and wildlife. The program also establishes a river assessment study to determine the impact potential development sites would have on fish and wildlife and to designate those areas which should be protected from development.

Summary of proposed changes. The single change is a technical correction which does not alter substance.

SECTION 1300: COORDINATION OF RIVER OPERATIONS

This section requires that the program be considered at all steps of power planning. It also directs that extensive consultation and coordination take place. It calls for federal project operators to consider the use of Canadian storage water and to develop maintenance plans. Bonneville funding also is addressed.

Summary of proposed changes. An amendment calling for Bonneville to fund water budget meetings was renumbered and inserted in Section 300.

SECTION 1400: AMENDMENTS

An amendment process was built into the program to allow flexibility to accommodate new research and technology as well as to correct any errors. Amendments are allowed on motion of the Council at any time and by outside parties through an official public process described under "Amendments Process" in this draft.

Summary of proposed changes. Two technical changes were included. One alters the amendment schedule so that it complies with the Council's power plan, and the other removes the required two-month "threshhold review" of amendment applications.

NEW SECTION 1500: FIVE-YEAR ACTION PLAN

Summary of proposed changes. Currently the Program provides little direction about the order in which its measures should be carried out. This new section is a five-year action plan to provide guidance on scheduling the implementation of the Program.

SECTION 1600: DISCLAIMERS AND SECTION 1700: GLOSSARY

No changes are proposed except to renumber the sections to accommodate the new Section 1500 action plan.■

compiled by Ruth Curtis

COURT TO FERC: PROTECT FISH

by Carlotta Collette

The Federal Energy Regulatory Commission (FERC) got word last month from the Ninth Circuit Court of Appeals that the Northwest Power Act "imposes substantive as well as procedural obligations on FERC."

The "substantive" obligation placed on FERC in this case requires "equitable treatment for fish and wildlife" in any hydroelectic dam licensing in the Columbia River Basin. The Court decision was in response to FERC's reissue of a 40-year license to the Rock Island Dam without first requiring improvements in the Dam's fish passage facilities.

Back in 1930, when the Rock Island Dam became the first hydroelectric project to span the Columbia River, there was little concern about providing passage for fish migrating up or down that wild rush of water to the sea. When the Federal Power Commission (now the Federal Energy Regulatory Commission — FERC) first licensed it, there was one powerhouse with no facilities for downstream fish migration.

When the second powerhouse was licensed in 1974, the fish passage situation had been only slightly improved. Going against the recommendations of the National Marine Fisheries Service (NMFS) and the Washington State Department of Fisheries and Game that passage facilities for juvenile fish be incorporated into the new powerhouse, FERC issued the second license with the caveat that the Chelan Public Utility District, which owns and operates the dam, conduct studies on the effects of the dam on the fish. FERC also reserved the right to re-open licensing to modify the dam for fish considerations.

In 1976, the State of Washington petitioned FERC to amend the existing licenses on five mid-Columbia dams, one of which was Rock Island. The goal of the proposed amendment was to require the dams to improve their fish passage facilities. The five dam petitions were combined into what was called the "Mid-Columbia Proceeding."

The proceeding was divided into two parts. In the first part, FERC ordered a quick hearing to consider measures to improve conditions for the 1979 spring smolt run. In phase two of the proceedings, FERC began procedures to determine long-term solutions. An interim settlement provided minimum spills and flows during peak runs until 1984. Even with these minimum flow and spill requirements, juvenile fish bypass facilities at Rock Island Dam are considered very inadequate by fishery experts.

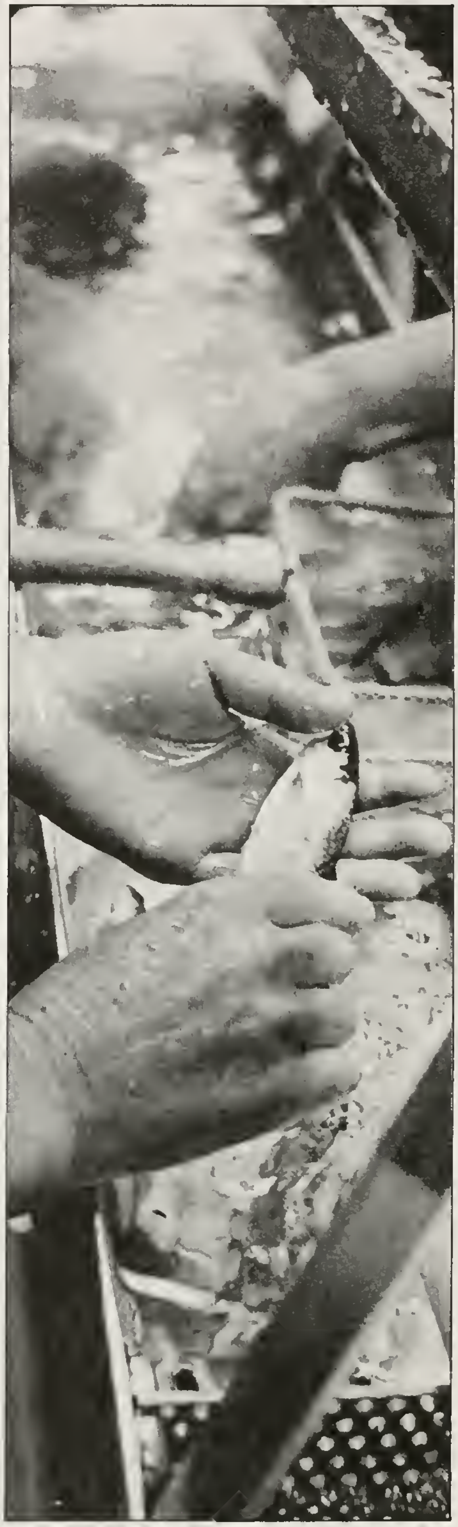
In the meantime, Chelan's 50-year operating license for Rock Island expired in 1980. FERC issued temporary one-year licenses for 1980 and 1981 and gave public notice that a long-term license was under consideration. Washington and NMFS petitioned to intervene in the proceeding stating that fish protection measures should be incorporated into the new license.

In May 1981, Rock Island was granted a new 40-year license to operate. No hearings were held. NMFS and the State of Washington were not told of the pending decision. Nor was an Environmental Impact Statement prepared. FERC spokespersons indicated that the agency felt that the Mid-Columbia Proceeding had covered the issues of fish safety and that no further action in that area was necessary until the entire Mid-Columbia Proceeding was settled.

NMFS, joined by the Yakima Indian Nation and the State of Washington, appealed the action. The National Wildlife Federation also filed an appeal. They all claimed that the license order failed to comply with The Federal Power Act, the Fish and Wildlife Coordination Act, the Pacific Northwest Power Planning and Conservation Act, the National Environmental Protection Act and the Commission's own regulations. They argued that FERC had neglected to consider fishery protection measures before ordering the license extension.

The Ninth Circuit Court of Appeals ruled that "The law is well defined: Prior to issuance of a new license, FERC must study the effect of a project on the fishery resource and consider possible mitigative measures. It is undisputed that in this proceeding FERC did not undertake this obligation prior to issuing the license . . . It also unreasonably failed to prepare an environmental impact statement prior to licensing."

The oldest dam on the Columbia has by this decision been essentially "delicensed." The case has been remanded back to FERC, and there could be additional hearings over FERC appeals and the expected counter-appeals. There is also the possibility that Chelan PUD might opt to put its money into improving fish passage facilities rather than lengthy court battles. ■



Checking brands at Rock Island Dam.

Wes Taft: BPA photo

more REGIONAL RESOURCES

In the May/June issue of **Energy News** the editor opened something of a Pandora's box. But instead of troubles pouring out, new information popped up. In that last issue, we ran a list of those places where members of the public could go for information on regional energy and fish and wildlife issues. The article ran under the headline "Region Rich in Resources."

It seems the region is even richer in information resources than we had ever imagined. Since that issue, we have gotten several letters from other groups offering their own lists. We are happy to see the region is so "resourceful" and appreciate the opportunity to pass the information along.

Undoubtedly we still left someone out. If so, let us know and we will run your information in subsequent issues (this could become a regular department). To qualify for listing, the resource must deal with energy or fish and wildlife issues which relate to the Northwest region and must be available to the general public. Please provide phone number, address, and relevant details such as special hours open to the public.—Editor

PUBLIC INTEREST GROUPS

A number of citizens' organizations in the Northwest have concentrated their efforts on energy policy and have developed considerable expertise. The public can call on them for information and for opportunities to influence regional energy policy. Among these groups are:

Alternative Energy Resources Organization
324 Fuller, C-4
Helena, MT 59601
(406) 443-7272

Idaho Fair Share
P.O. Box 1793
Coeur D'Alene, ID 83814
(208) 664-5518

Natural Resources Defense Council
25 Kearny St.
San Francisco, CA 94108
(415) 421-6561

Northern Plains Resources Council
P.O. Box 508
Helena, MT 59624
(406) 443-4965

Northwest Conservation Act Coalition
P.O. Box 20458
Seattle, WA 98122
(206) 784-4379

A number of other groups are actively involved in the politics of energy policy. If you want to get involved, look at the list below for a group in your area.

Audubon Society (Seattle, WA)
Clark Co. PUD Owners Assoc. (Vancouver, WA)
Environmental Information Center (Helena, MT)
Eugene Future Power Committee (Eugene, OR)
Fair Electric Rates Now (Olympia, WA)
Fair Use of Snohomish Energy (Everett, WA)
Friends of the Earth (Seattle, WA)
Human Resources Council (Missoula, MT)
Idaho Conservation League (Boise, ID)
Idaho Consumer Affairs (Boise, ID)
Idaho Wildlife Federation (Boise, ID)
League of Women Voters
(Boise, ID) (Missoula, MT)
(Portland, OR) (Seattle, WA)
Light Brigade/Washington Fair Share (Seattle, WA)
Mountaineers (Seattle, WA)
Oregon Environmental Council (Portland, OR)
Oregon Fair Share (Portland, OR)
Oregon State Public Interest Group (Portland, OR)
Population Dynamics (Seattle, WA)
Service Employees International Union, NW States Council (Seattle, WA)
Sierra Club (Seattle, WA)
Southwest Oregon Community Action Council (North Bend, OR)
United Food & Commercial Workers, #1001 (Seattle, WA)
Whatcom County Opportunity Council (Bellingham, WA)

ADDITIONAL RESOURCES

Bonneville Power Administration
Boise District Office
Owyee Plaza, Suite 245
1109 Main St.
Boise, ID 83707
(208) 334-9137

Cooperative Extension Service
Montana State University
Bozeman, Montana 59717
(406) 994-3451

Washington Sea Grant Program
Washington State University
1919 NE 78th St.
Vancouver, WA 98665
(206) 696-6018

FISH & WILDLIFE RESOURCES

Columbia River Inter-Tribal Fish Commission
2705 E. Burnside Street, Suite 114
Portland, OR 97214
(503) 238-0667

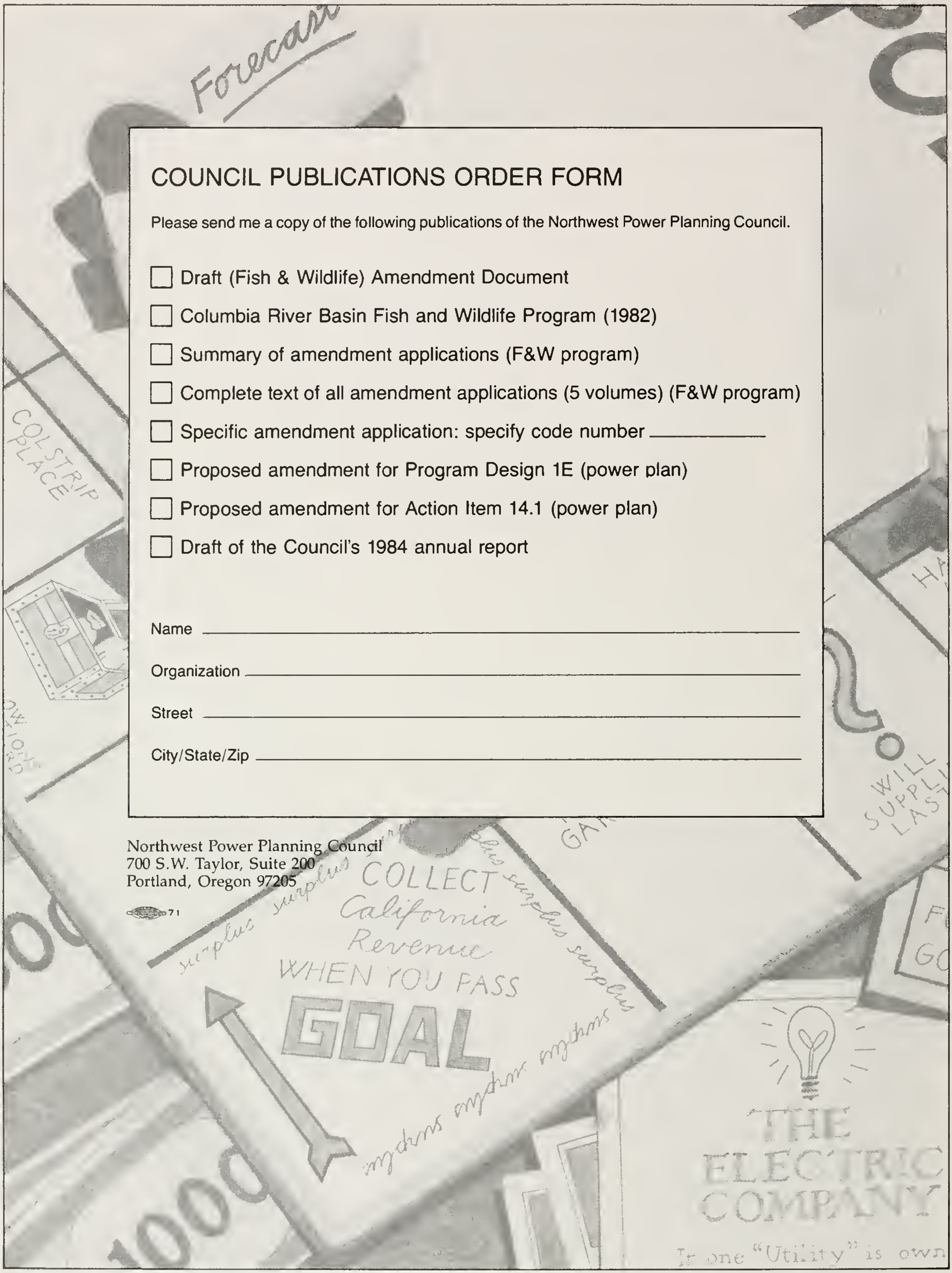
Department of Natural Resources
Confederated Tribes of the
Umatilla Indian Reservation
P.O. Box 638
Pendleton, OR 97801
(503) 276-8221

Fisheries Department
Nez Perce Tribe
P.O. Box 305
Lapwai, ID 83540
(208) 843-2253

Natural Resources Department
Confederated Tribes of the Warm
Springs Reservation of Oregon
P.O. Box "C"
Warm Springs, OR 97761
(503) 553-1161

Natural Resources Division
Confederated Tribes and Bands of the
Yakima Indian Nation
P.O. Box 151
Toppenish, WA 98948
(509) 865-5121

Water Budget Center
(Tribes and Fish & Wildlife Agencies)
2705 E. Burnside Street, Suite 213
Portland, OR 97214
(503) 230-4286



COUNCIL PUBLICATIONS ORDER FORM

Please send me a copy of the following publications of the Northwest Power Planning Council.

☐ Draft (Fish & Wildlife) Amendment Document

☐ Columbia River Basin Fish and Wildlife Program (1982)

☐ Summary of amendment applications (F&W program)

☐ Complete text of all amendment applications (5 volumes) (F&W program)

☐ Specific amendment application: specify code number ____________

☐ Proposed amendment for Program Design 1E (power plan)

☐ Proposed amendment for Action Item 14.1 (power plan)

☐ Draft of the Council's 1984 annual report

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Organization ______________________________

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Portland, Oregon 97205

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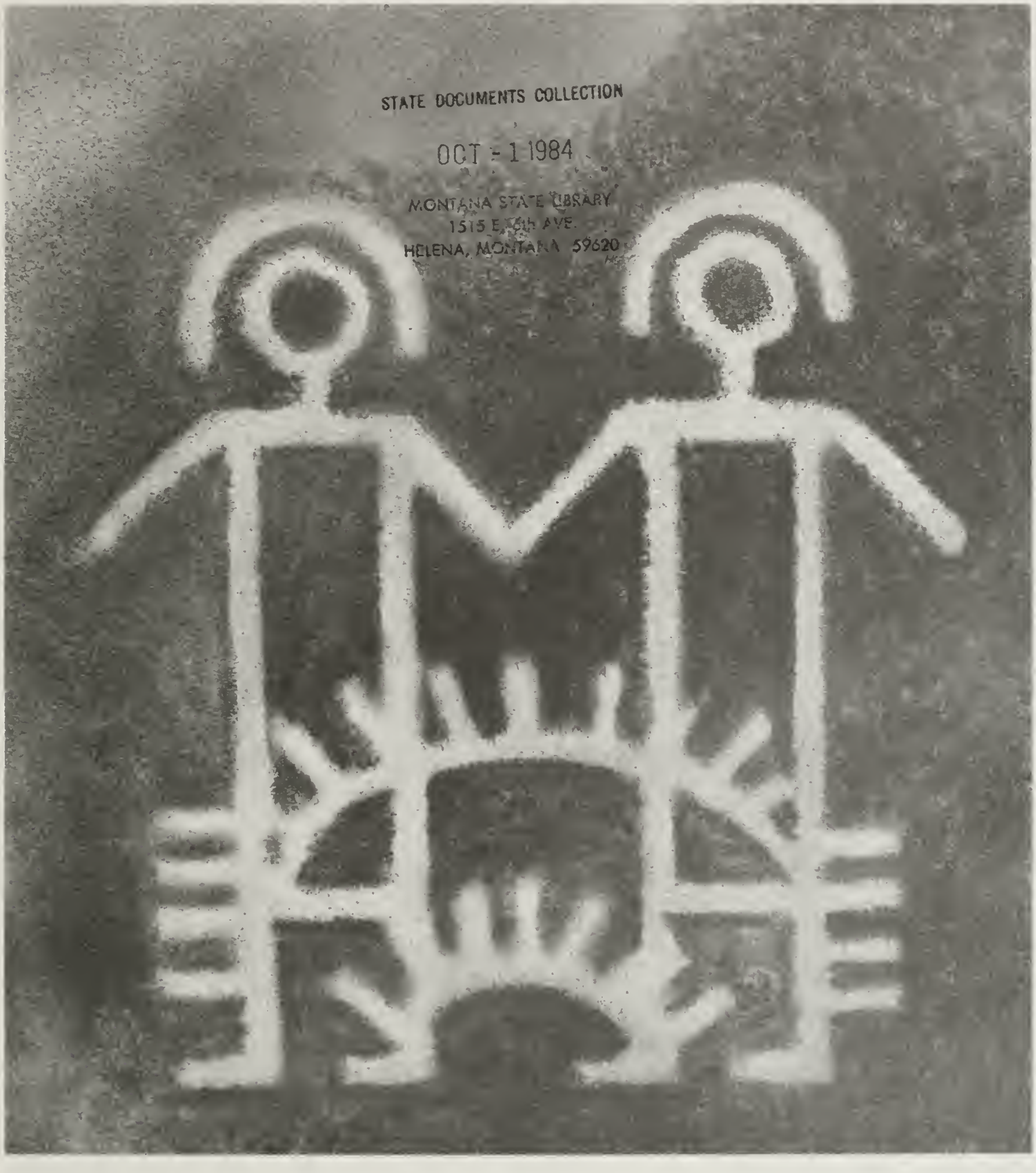

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Idaho

Northwest Power Planning Council
Statehouse Mall
Towers Building
450 West State
Boise, Idaho 83720

Telephone: 208-334-2956

Council members:
W. Larry Mills
Robert Saxvik

Montana

Northwest Power Planning Council
Capitol Station
Helena, Montana 59620

Telephone: 406-444-3952

Council Members:
Keith Colbo, chairman
Gerald Mueller

Oregon

Northwest Power Planning Council
505C State Office Building
State of Oregon
Portland, Oregon 97201

Telephone: 503-229-5171

Council members:
Roy Hemmingway
Donald Godard

Washington

Washington State Energy Office
400 East Union
Olympia, Washington 98504

Telephone: 206-754-0701

Council Members:
Charles Collins
Kai Lee

Central

Northwest Power Planning Council
700 S.W. Taylor, Suite 200
Portland, Oregon 97205

Telephone: 503-222-5161
Toll Free: 1-800-222-3355
(1-800-452-2324 in Oregon)

Executive Director:
Edward Sheets

NORTHWEST
ENERGY NEWS
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700 S.W. Taylor, Suite 200, Portland, Oregon 97205

The Northwest Power Planning Council is required to develop a program to restore the Columbia fisheries and a regional electric energy plan, to be carried out by the Bonneville Power Administration, emphasizing cost-effective conservation and renewable resources

Editor: Dulcy Mahar
Graphic Design: Linda Sawaya

EDITOR'S NOTES

It is said that the Indians call the salmon their brothers and sisters. Truly, the history of both the salmon and the great Indian nations of the Northwest are inseparable. So too, their futures are intertwined, not only by cultural and religious relationships, but by law as well.

The Northwest Power Act of 1980 made specific tribes of the Columbia Basin full partners with other parties in the coalition fighting to save the Basin's fish and wildlife. Two stories in this issue, one on the Yakima Basin and the other an interview, touch on Indian rights and heritage.

Because of this, we felt it would be appropriate to use Native American art for our cover. Sandy Osawa, a Makah (Olympic Peninsula) Indian, was referred to us by the Columbia River Inter-Tribal Fish Commission. She and her husband work out of Seattle-based "Upstream Productions," which produced this issue's cover. The design is based on petroglyphs found in the middle Columbia River area near Vantage, Washington.

In that area, a number of these "twinned" figures appear depicted as identical anthropomorphs holding hands. The rayed arch, possibly the sun, is another common motif.

Petroglyphs date back to prehistoric times. They were painted or carved, where the river cut through basaltic rock, on the walls of caves and canyons.—DM

Cover illustration by Upstream Productions.

CALENDAR

September 14-15 — 1984 Northwest Solar Conference in Portland, Oregon. Sponsored by the Solar Energy Association of Oregon.

September 19-20 — Northwest Power Planning Council Meeting in Yakima, Washington. (Note change of place.)

September 24-25 — Wild Trout III in Mammoth, Wyoming. Sponsored by the Federation of Fly Fishers, Trout Unlimited, U.S. Department of Agriculture and U.S. Department of Interior. Contact the Federation of Fly Fishers, P.O. Box 1088, West Yellowstone, MT 59758

September 28-30 — Warm Springs Conservation Conference at Kah-Nee-Ta Resort in Oregon. Contact Susan Case, Columbia River Inter-Tribal Fish Commission, 2705 E. Burnside, #114, Portland, OR 97214, (503) 238-0667

October 3-5 — Northwest Small Hydroelectric Association Annual Conference/Seminar/Trade Exhibit at the Jantzen Beach Thunderbird in Portland, Oregon.

October 10-11 — Northwest Power Planning Council Meeting in Boise, Idaho. (Note change of place)

October 26 — Conference on the Politics and Economics of Columbia River Water in Portland, Oregon. Contact Michael S. Spranger, Washington Sea Grant, 1919 N.E. 78th Street, Vancouver, WA 98665, (206) 696-6018.

October 31-November 1 — Northwest Power Planning Council Meeting in Butte, Montana.

November 8-9 — Conference on Investing in Cogeneration in Arlington, Virginia. Contact Joanne Van de Merlen, Energy Bureau, Inc., 41 East 42nd St., New York, NY 10017, (212) 687-3177.

November 28-29 — Northwest Power Planning Council Meeting in Portland, Oregon.

November 28-30 — World Energy Engineering Congress in Atlanta, Georgia. Contact Albert Thuman, Association of Energy Engineers, Suite 340, 4025 Pleasantdale Road, Atlanta, GA 30340, (404) 447-5083.

Compiled by Ruth Curtis

Locations for Northwest Power Planning Council meetings scheduled for September 19-20 and October 10-11 have been reversed. The September meeting will be held in Yakima, Washington, and the October meeting will be held in Boise, Idaho. Fish and wildlife program amendments are scheduled for adoption at the Boise meeting.

IN THE NEWS

Changes proposed for surcharge calculation

The Northwest Power Planning Council has entered a rulemaking process to amend its method for calculating surcharges as outlined in Appendix D of the Northwest Power Plan. Rulemaking is required for any substantive changes in the plan.

The Council has been authorized by Congress to recommend that the Bonneville Power Administration levy a surcharge of not less than 10 percent nor more than 50 percent on jurisdictions which do not adopt the Council's model conservation standards by January 1, 1986. The surcharge is designed to provide a way to recapture the added costs to the region created by failure to adopt the standards.

The Council adopted model conservation standards and recommended a surcharge on jurisdictions that fail to adopt them as part of the Northwest Conservation and Electric Power Plan in April of 1983. Those decisions are not in question in the current rulemaking, which deals only with the method for calculating the surcharge.

The decision to revise the calculations was made after Bonneville Power Administration staff identified potential administrative problems due to the complexity of the surcharge calculations. The Council agreed to enter into rulemaking to simplify the procedures after it reviewed oral public testimony and written testimony based on an issue paper the Council published on the subject in July.

According to Tom Foley, the Council's manager of conservation and resources, the proposed plan amendment would improve the method of calculating the surcharge in four ways.

"First, state and local jurisdictions and Bonneville customers will be able to see clearly how the surcharge might affect them. Second, Bonneville's duties will be lessened as it will not have to maintain voluminous records on consumers in its customers' territories. Third, the surcharge will be imposed only once for each year that standards are not adopted or equivalent energy savings realized. And fourth, potentially time consuming and data intensive calculations will be eliminated," he explained.

The proposed changes would provide for a 10 percent across-the-board surcharge on firm loads for jurisdictions which do not adopt the standards. Sue Hickey, director of Bonneville's planning and evaluation division, called the proposed changes a "significant improvement" and cited "ease of administration and appropriateness of application" in the new approach.

The rulemaking process will involve a public comment period which will run through 5 p.m., October 12. Public hearings will be held in each state between September 24 and October 1. A final decision on the amendments will be made at the Council's October 31/November 1 meeting in Butte, Montana. An issue paper on the surcharge methodology and copies of the proposed change are available from the Council.

Council, gas companies settle out of court

A suit brought by a group of six Northwest natural gas companies challenging the Northwest Power Planning Council's power plan has been settled out of court.

The gas companies dropped the suit after the Council

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Oregon's Senator Mark Hatfield will be the keynote speaker at the "Politics and Economics of Columbia River Water" conference on October 26, 1984 (see Calendar). Northwest Power Planning Council member Kai Lee and Executive Director Edward Sheets will be among more than a dozen panel members whose job will be to inspire and encourage "a dialogue and debate . . . that will lead to better management decisions" regarding the long-term use of the river's water.

Photo by Carlotta Collette

IN THE NEWS
continued

agreed to technical amendments to Appendix J of its power plan. The appendix deals with model conservation standards, and the amendments clarify that the standards apply only to electrically-heated homes.

The Council also said it would consider future changes if it can be demonstrated that significant fuel switching from natural gas to electricity occurs as a result of the plan's conservation programs and if fuel switching reduces the cost effectiveness of the plan for consumers.

Two amendments affect regional power plan

The Northwest Power Planning Council has amended Action Item 14.1 of its power plan following a public comment period. The amendment will allow the Bonneville Power Administration greater flexibility in selecting projects to test the feasibility of resource options.

The public comment period for a second proposed amendment was extended to September 4. That proposal addresses the method for determining eligibility for 100 percent home weatherization financing as outlined in the power plan's Program Design Principal 1E. No decision had been made on that amendment at press time.

Council seeks input on region's economic future

Some 260 regional leaders representing businesses, utilities, government agencies, academics, and public interest groups have been asked for their opinions on the future of the Northwest economy. The Northwest Power Planning Council has distributed a "Staff Working Paper on Economics and Demographics" to these leaders to solicit their opinions and stimulate discussion.

The working paper is part of efforts to develop new economic and demographic assumptions for use in revision of the Council's power plan in 1985. The Council has also formed a new Economic Forecasting Advisory Committee.

Comments received as a result of the working paper will provide input into the development of new assumptions. Responses to the paper are due by 5 p.m. on October 1. Copies of the paper are available on request from the Council. A tentative schedule calls for a preliminary draft of new assumptions to be released in late November with a public comment period running through January 4.

Northwest researchers work toward 'fat' fish

Northwest fish are the guinea pigs in several regional studies going on now. In Vancouver, B.C., a $100,000-a-year government Fisheries Department project is treating young salmon or salmon eggs with male salmon hormones which sterilize them.

Sterile salmon are not concerned with spawning in their natal hatcheries. It's hoped they will be content instead to grow old and fat in the ocean where they may some day constitute a fine commercial crop.

Scientists performing these experiments have also noted that female chinook treated to the same hormone become capable of producing their own sperm. The sperm itself is unique and will only produce female progeny.

A similar research project is being conducted by biochemical geneticists at the National Marine Fisheries Service in Seattle. The salmon in this case are hatched from eggs that contain three sets of chromosomes rather than the usual two. Like the Canadian salmon, they are fat and sterile, but, unlike their northern counterparts, these fish may retain an instinctive need to return to their spawning grounds.

Seattle scientists released triploid steelhead in the San Juan Islands this summer, and more are scheduled for outplanting in coming months. There is some concern that these potential giants might spend their long lives at the mouths of hatchery streams "slurping" down smolt. To limit the effects of such gluttonous grazing, only "small" releases of "30,000-40,000 at a time" are planned.—CC

Bonneville moves to protect WPPSS investments

The Bonneville Power Administration is recommending that the Washington Public Power Supply System adopt "assignment agreements" that would protect Bonneville's investment in WPPSS plants 1, 2, and 3.

The move would protect the agency from an adverse court decision. In the 1970s, Bonneville entered into net-billing contracts with WPPSS and participating utilities to acquire the output of the WPPSS plants. The federal court was asked to determine whether the utilities had the authority to enter the agreements. While the court upheld the agreements' validity, the ruling has been appealed to the U.S. Ninth Circuit Court.

Bonneville maintains the assignment agreements are necessary to protect WPPSS plant 2 and to preserve the region's options on plants 1 and 3 — resumption of construction, continued delay, or termination.

The Council has a new photo reflecting the change in its membership; Kai N. Lee of Washington and Donald W. Godard are new members.

Seated (l. to r.):
Council Chairman Keith L. Colbo,
Vice Chairman Leroy H. Hemmingway.
Standing (l. to r.):
Kai N. Lee, Charles Collins,
Gerald Mueller, Donald W. Godard,
Robert (Bob) Saxvik,
W. Larry Mills.

Photo by Jerome Hart

IN THE NEWS
continued

Regional planning bill gets mixed support

It was termed an idea whose time has come by Congressman Richard Ottinger of New York. Nevertheless, the concept of more regional planning bodies like the Northwest Power Planning Council will likely have to wait at least one more year.

HR 5766, a bill to authorize such planning bodies, received heavy opposition from some utilities and the U.S. Department of Energy. The main thrust of the opposition argument is that such bodies would create another layer of bureaucracy without offsetting benefits.

Ralph Cavanagh, attorney for the Natural Resources Defense Council, argued on behalf of the bill. "No utility is an island," he told a Congressional subcommittee, ". . . decisions about developing and transferring power supplies have consequences that reverberate far beyond the confines of the state of origin. Given the way U.S. power pools are actually organized, state boundaries make about as much sense as the African national borders drawn by European colonial powers."

NORTHWEST Shorts

It's the best record of any nuclear project in the country, according to Alexander Squire, deputy managing director for the Washington Public Power Supply System. He was referring to 69 "reportable" events at WPPSS plant 2, which began operation in Richland, Washington earlier this year. Squire says the problems reported were minor and had little impact on the plant's safety. "As a matter of fact," he said, "the identification, reporting, and resolution of these deficiencies are evidence of the Supply System's commitment to strict adherence to technical specifications and operating procedures."

They'd pay higher mortgages for energy efficient homes say Oregon citizens. An Oregon Department of Energy survey of 603 people showed overwhelming support for conservation. Some 76 percent of the respondents said they'd be willing to make higher payments for an energy efficient home and an even greater number supported new energy efficient codes. This was despite the fact that 90 percent of the participants believe that the state has an adequate or surplus supply of energy.

Seattle should adopt model conservation standards according to a citizens advisory committee which has made the recommendation to Mayor Charles Royer. Maura O'Neill, spokesperson for the New Electric Service Policy Citizens Advisory Committee, said that adoption of the Northwest Power Planning Council's standards would mean, "the city would be continuing a long tradition of leadership in the area of energy conservation." The committee is made up of groups representing low income, environmental, commercial, industrial, and development concerns.

Regional aluminum plants operated at 68 percent capacity last year, according to *Northwest Aluminum News*. That's up slightly from the previous year's 66 percent but far below 1981's 96 percent. Last year the companies also paid the Bonneville Power Administration over $448 million for electricity, 96 percent of what was paid out by all direct service industries. This represents 22 percent of all power sold by Bonneville during the year.

Government involvement in energy conservation research has dropped to 11 percent of all such research, according to a study released by the Building Thermal Envelope Coordinating Council. Private industry and private and academic laboratories account for half of all such research, according to *Energy Design Update*.

Peanut Power may become a new term in the power world. The municipal utility of Dotham, Alabama, which calls itself the "peanut capital of the world," is planning to fuel its new power plant with peanut shells, according to *Resource Recovery Report*.

All rate relationships should be considered according to the region's public and private utilities. They have petitioned Northwest congressmen to expand a study requested by Oregon Senator Mark Hatfield. The study, sought by industries which purchase power directly from the Bonneville Power Administration, examines only the relationship between regional power costs and the aluminum industry. The utilities believe that rate impacts on all regional industry and agriculture should be considered.

The leadership that brought about the regional power act is what is needed to settle the dispute over exchange rates, according to an aluminum industry executive. Writing in *Reynolds News*, Richard Bidwell, director of the company's energy resources, says he hopes that "what was once a coalition that put aside its differences and worked for the good of the entire Northwest and its citizens is not so ripped apart that it cannot be repaired . . ."

The Bonneville Power Administration found itself powerless — literally. Last summer water seeped into an underground vault at the agency's Northeast Portland headquarters shorting out power. Computer terminals went dead, offices darkened, and phones failed to light up so that no one could answer them, although they continued to ring.

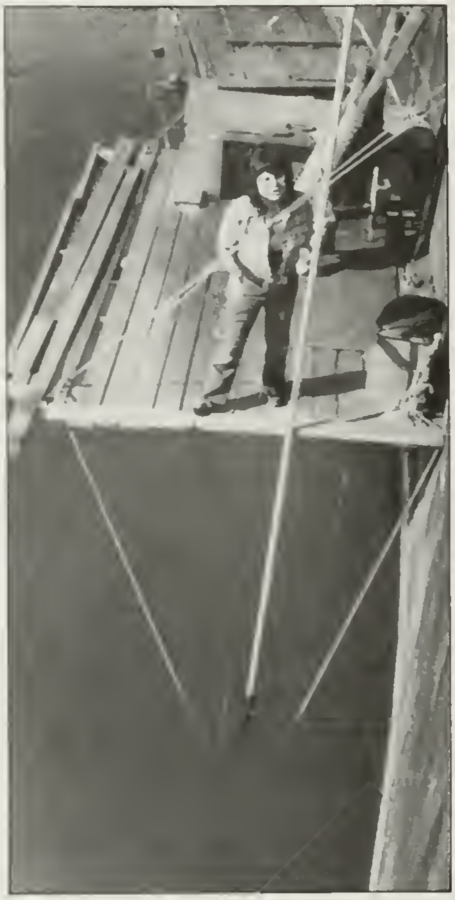
The latest bumperstickers spotted around Oregon read "Real Oregonians Don't Eat Feedlot Salmon."

INTERVIEW:

KATHRYN BRIGHAM

by Carlotta Collette

It is a windy day towards the end of the summer fishing season. Kathryn Brigham climbs down the wooden ladder to the platform some 12 feet below the sidewalk. The traditional long-handled net sits there. It is perhaps 20 feet long and the net itself is wide, six feet across and just as deep. A long line leads from the net back to Kathryn as she lowers the pole and hoop into the river.



Photos by Carlotta Collette

Sometimes I can tell if there's a fish by the tug on the net, but if not, the line helps.

As she speaks she gracefully sweeps the pole up and out of the water. Her movement is quick but the net is empty.

I felt something. Maybe it was just the river. There aren't many salmon, just some steelheads. Our big salmon run comes in September. Of course there are no runs like before. There are barely enough fish to meet our ceremonial needs, let alone the needs of a commercial fishery.

Kathryn Brigham is the great-great granddaughter of a Cayuse Indian leader. Her grandmother is Nez Perce. Her husband is a Walla Walla Indian from Celilo Falls and she herself grew up on the Umatilla Reservation. She has relatives in most of the tribes, on most of the reservations. The concept of "family" for her is very broad.

Like many of her peers she grew up learning to hunt and collect roots and berries. More than anything else, she learned to fish. Unlike many of her peers, she has become an important figure in resource politics in the Northwest.

I was drafted into it. All I really knew about the fisheries came from my fishing. I was not really in tribal politics before.

What drew her in was her appointment in 1976 by the tribal council of the Umatilla Nation to represent them on the Columbia River Inter-Tribal Fish Commission. The Commission brings together representatives from each of the four confederated treaty tribes (the Nez Perce, Umatilla, Warm Springs and Yakima Indian Nations) to set fishing seasons for the Indian fisheries and, in numerous other ways, to protect the fish and wildlife of the Columbia River Basin.

Kathryn's work on the commission, which keeps her away from home at meetings and out visiting projects most of every week, is without salary. She is reimbursed for her expenses, but she would do it anyway, even if there were no compensation. She is doing it for her family.

A lot of people will say that the salmon are our brothers and sisters. They're a part of everything. We're a whole family and we need to look out for each other. We look out for the salmon and the salmon will look out for us. The same with the deer and the elk and even the roots and the berries. We're all just a big family and we have to live together.

Despite her protest that she "was drafted into it," it really was natural for Kathryn to become a political leader in the Northwest. She comes from a family of tribal leaders.

Her great-great grandfather signed the treaty of 1855 for the Cayuse Tribe. That was the treaty (actually four separate treaties) that created the Northwest's four Columbia River Basin confederated tribal reservations. It was the treaty in which the tribes reserved their fishing rights, the right to hunt (recognizing that they would lose some wilderness with time and the growth of the white population) and the right to gather berries and dig favored roots. It was the treaty in which they ceded, in exchange for these retained rights, millions of acres of their land.

Kathryn's great grandfather was a tribal leader also, and her grandfather, Sam Kash Kash, knew most of the languages spoken by the individual tribes and often acted as a translator among them. For 50 years he served on the councils and fish committees, attending the meetings that led to the tribal government structure that now manages life for the Indian people in the basin.

As the eldest daughter of six children, Kathryn often accompanied her grandfather on his trips to visit the other tribes.

I used to drive my grandfather to the meetings. I'd sit in there and I'd listen to them. After the meetings were over I'd ask questions for clarification. I'd turn to him for advice as to what I should be doing. He would get a good chuckle out of me once in a while, because I'd ask some silly questions, but he was pretty patient with me. That's when I began to understand what my grandfather's responsibility was, and he began to pound into me what my responsibility was.

A lot of people will say that the salmon are our brothers and sisters.

Kathryn arrives at her interview bringing her daughter, a nephew and her granddaughter. She wants to make a point at the outset:

We do everything to protect the fish for our children and our children's children. I want my daughters and my granddaughter to be able to fish the way we do. This work is for them.

Kathryn, her husband, their daughters and some of their friends all fish off scaffoldings at Cascade Locks, inside the channel that hasn't been used to alter the water level since the Bonneville Dam downriver raised it permanently. They've fished there for more than 20 years. Her husband's family used to fish at Celilo Falls. "Everyone did," she adds.

The scaffoldings they fish off now are not owned by Kathryn and her husband.

All of us are exercising a tribal right. It's not an individual right. We upgrade the scaffolding and make improvements on it and fish here all the time, but it's always a tribal right. It if was an individual right, I think we'd be in a lot of trouble. We'd be approached by different people to buy out these sites. Some people might sell and some might not. Because it's a tribal right, the tribes have the responsibility to protect that right.

Oregon Historical Society photo (Negative #45451)

The fishing priorities for the tribes are strict. The first catch goes to the ceremonial uses of the salmon, still an essential part of the Indian religion. After the ceremonial needs are met the tribes attempt to catch a subsistence level of fish for their own consumption. If both of these needs are met, the surplus can be marketed.

Kathryn and her husband catch fish and hunt for a living. They understand the problems fishermen are having. This year there are some steelhead, enough for a commercial season even, but it has been some time since there was a good chinook catch to making a living off.

At the Fish Commission we do everything we can for the fishermen. We try to provide the fishing seasons they need. But, we have to cut them off sometimes to meet our own escapement goals: to let enough fish return to the spawning grounds to provide the salmon for the future.

I think all of us have been taught that way. Sometimes we disagree on how that should be done, but we all know that that is the purpose of our tribal government: to watch out for the children's children.

When you look at the fish as a part of the whole, then you must look at everything. The fish need good water quality and good habitats. These must be protected so that the fish will always be there. This covers everything. It covers irrigation and farming, timber management, the dams, fishing – not only in the river but out in the ocean, too. All of these affect the water quality and that affects the fish.

Even when I was very little we would go up into the mountains to look for berries and to dig roots. When we got there if it wasn't clean, it was clean when we left. That was something that I just accepted, and I'm trying to teach my girls the same thing.

There was a big move in the forties and the fifties to get the Indians off the reservations and into the cities. A lot of Indians went into the cities and found that there was really nothing there for them. They forgot the old ways. This made a big gap in our culture. Now a lot of these people go back to the reservations to try to learn the values that they have forgotten. They were taught these things when they were young. Now they have to remember them.

We all know the purpose of our tribal government: to watch out for the children's children.

Coincidental with the Indian movement off of the reservations in the forties and fifties was the construction of hydroelectric dams along the Columbia River and its tributaries. As each project was planned, the valued resource of the tribal people was jeopardized. As each flow of the river was interrupted, so was the life cycle of the fish. What white society has had difficulty understanding is that the Indian life cycle was carefully integrated over many centuries with the cyclical lives of their partners the salmon. The Indians say, damage done to the salmon is damage done directly to the Indian people. That's the nature of families. Families suffer and prosper together.

To protect their negotiated treaty fishing rights for salmon, the tribes have, on many occasions, turned to the federal court system. Their right to the fish has been affirmed in several major court decisions. These include the nationally famous Belloni (United States v. Oregon & Washington) and Boldt (United States v. Washington) decisions (named after their respective federal court judges).

The Belloni decision, rendered in Oregon in 1969, declared that the tribes are entitled to "a fair share of the fish produced by the Columbia River system." This decision was used as a precedent by Judge George Boldt in 1974 in a similar proceeding in which the tribes were acknowledged to have retained the rights to 50 percent of the harvestable fish in specific parts of the state of Washington.

Unfortunately, half of nothing is still nothing. The Boldt decision is being further refined in "Phase II" proceedings. The district court "Phase II" opinion stated that "the most fundamental prerequisite to exercising the right to take fish is the existence of fish to be taken.

"The tribes have an implicitly incorporated right . . . not to have the fishery habitat degraded by the actions of man which cause environmental damage," reasoned the court. The district court went on to identify "access to and from the sea . . . and an adequate supply of good quality water" as necessary to the survival of the fisheries. "Phase II" has been appealed to the United States Court of Appeals for the Ninth Circuit. That decision is still pending.

The court decisions helped clarify the issues in the Columbia Basin. But, they didn't settle anything. The damage was done. Salmon runs had already been reduced by more than two-thirds. Efforts to reduce the harm done to the fisheries had been carried out at most of the dams during their construction. The results had been less than glorious. The tribes were ready to return to the courts to demand coordinated improvements in the runs.

When our treaties were signed they never mentioned that our fish would be gone.

We're no longer really looking at those lawsuits. We're hoping that the (Northwest Power) Act will carry this out. The Act says "the agencies and tribes," so the states have to look at us now. Already there is better coordination between us. That's something we've been battling for a long time. Before, when we told them they had treaty obligations they seemed to want to pat us on the head and say, "We're doing the best we can."

The tribes are recognized as management agencies now. We have always had the right to set seasons for our tribal people. The states can't regulate us unless they can prove that there is a conservation need. We're supposed to be "co-managers." We've had to bring them to court to get them to share the data with us so we could work with them. The court ordered them to.

My great-great grandfather's goal with the treaty was to protect our rights. My goal is the same. That has always been the goal. My daughter is 18. The other day she asked me, "Why aren't we fishing like we used to?" I told her that we're working on that. We're working on bringing them back. It's what the tribes are working for.

The treaties promised that. The states have an obligation. The Federal Government has an obligation. There are obligations through the Act. Our treaties said there was going to be fish all the way up the river. When our treaties were signed they never mentioned that our fish would be gone. They said that the deer and elk might be gone, but they never said that about the fish.

We might have to learn the white man's way to make them live up to their part of the bargain. We might have to go to school to be lawyers or biologists. But we will have our fish back. ■

Photo from the Wapato Dam findings in the 1929 "Ditch Screen Report" by Ernest M. Brannon.

Fish & Fields

THE YAKIMA DILEMMA

by Carlotta Collette

When Isaac Ingalls Stevens, first governor of the Washington territory, reported to his president in 1855 that treaties had been signed with the Northwest Indian tribes, he probably really believed his statement that, "The (treaty) council ended in a most satisfactory manner."

In fact, issues contested at that famous meeting are still not settled nearly a century and a half later. The Yakima people who signed away their thousands of years of "ownership" (a term not commonly used among Indian people) of more than 29,000 square miles in Washington state are still arguing for the rights they did *not* bargain away; the right to the Yakima and Columbia Basins' sacred resource, the salmon.

Few people in the Yakima Basin remember the time when there were real salmon runs there. When the Yakima was one of the most productive salmon rivers in the territory. When as many as 600,000 fish returned each year to spawn.

What they know of the Yakima now is the incredible topsoil, in some places as much as 200 feet deep. The Yakima tribal people knew, before white settlers came, that the arid valley would produce almost any crop, if more water than the seven-inch average annual rainfall could be provided. Even their great Chief Ka-mi-akin was said to have had a garden and livestock. But, the salmon were always their staple food and spiritual partners.

With the introduction of irrigation in the 1860s, the value in terms of production capability of the land soared and the salmon began to suffer. In 1903, just a year after the Reclamation Sevice (now the Bureau of Reclamation) was formed, the federal "Yakima Project" was begun. This major assignment diverted the waters of the various creeks and rivers in the Yakima Basin into a vast series of canals. Today an acre with water on it in the Yakima Basin produces about $600 in fruits, grains or vegetables. In total, about half a million acres are under irrigation, yielding between $2 and $4 million in produce annually.

But, these are the same creeks and rivers that once carried the thousands of fish from the Yakima country to the Columbia River and from there to the ocean and back again. The fish that were guaranteed to the Yakima Nation by their treaty with Governor Stevens are frequently left high and dry. Some years all of the water is diverted. The few remaining fish go with it — into the fields.

"All of the water has been allocated to agriculture," explains Walt Larrick, fisheries biologist for the basin's irrigators. "It's not allocated for fish at all. There's never been a state water right issued to the fisheries resource. The federal government allocated it all to the state for farming. In fact, they over-allocated it. They've given water rights out for water we don't have. We have it in good water years, but not in bad ones, and we have bad water years regularly."

The Yakima River Basin is considered so important that it has a whole section of its own (section 900) in the Northwest Power Planning Council's fish and wildlife program. The U.S. Congress has agreed that the basin should have high priority. This past summer, at the strong urging of the Northwest congressional delegation, Congress approved appropriations to fund enhancement projects that will be carried out by the Bonneville Power Administration and the Bureau of Reclamation. Two qualities make the basin ripe for action. First, the problems are critical. Second, the potential for remedy is high.

Seasonal water shortages have been exacerbated by competing water interests. On the one hand, water is needed to protect fishing interests. On the other hand, it is needed to irrigate the orchards and other agriculture vital to the local economy. Fish problems are compounded by inadequate or nonexistent passage facilities.

Fishery experts estimate that correction of these facilities will increase Yakima salmon runs tenfold. Additional water to support salmon rearing and migration could increase runs another tenfold. Congressional action will speed construction of the projects by a full year.

The recent and long-sought appropriations may not be an end to the problems, but they are a beginning to a solution.

"The tribes argue," counters Bob Tuck, fisheries biologist for the Yakima Indian Nation, "that their treaty assures them not only fish, but the water to sustain them. That theirs is a prior right." The state of Washington is attempting to adjudicate the water rights issue. The tribe does not recognize the state's authority to do so. It's an example of the conflict in Yakima. Water is the key — both the quantity of it and the right to use it. Everyone needs it and no one has enough of it.

Most everyone in the basin agrees that if they could all cooperate, and the federal government were willing, something could be done about the water in the basin. Walt Larrick explains, "The Yakima Basin watershed can produce a little over 3 million acre feet of water per year. The storage facilities now can store about a million acres. The irrigation districts could use about 2 or 2½ million acre feet a year. There's enough water in the system, but there's no place we can store it to use it.

"In the spring and fall when it rains and snows, we have these freshets and the river comes up and really roars. Then it goes back out again. If we put it somewhere, then used it in the summer, we'd have a solution. We could meet instream flow needs and irrigation needs.

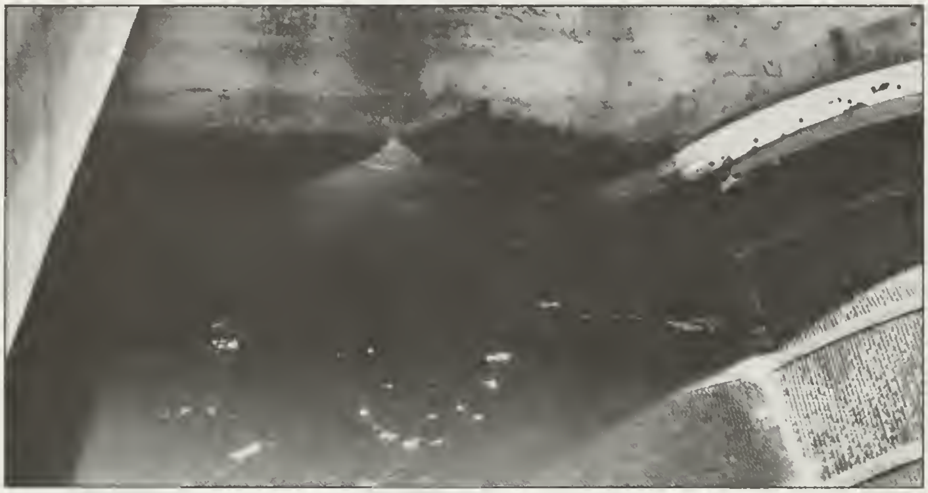
"Everyone would benefit. Everyone would get more water. But increasing storage is extremely expensive. It means building or raising existing dams. Everyone talks about Bumping Lake. That would cost hundreds of millions. And, there's no guarantee yet that the fisheries would necessarily get more of the water. They're worried that more water might just invite more irrigation."

So, increased water storage dedicated to the fisheries is on most people's wish list. (Some hold that water conservation will solve the problem without storage.) The Bureau of Reclamation is studying several sites in the state to determine where it would be most effective and least expensive to build the needed facilities.

But, there's another problem in the Yakima Basin. Even when there is water in the river, the fish have difficulty passing the dams. For upstream migrants there are inadequate or nonexistent ladders. For the smolts heading down, some of the screens are more hazardous than helpful. The young fish are often impinged on the screens, or the screens fail to direct them into the narrow bypass that sends them over the spillways instead of into the irrigation ditches that lead to the fields.

Carlotta Collette photos

The irrigators told me all I had to do was develop a fish that could go through the holes around the screens . . .



Above: Roza Dam's fish bypass opening (center) will be enlarged and rotating screens (right) replaced to improve downstream fish migration.

Below: Indian fishing scaffolds dot the river near the fish ladder on the east branch of the Wapato Diversion Dam. The west branch of the dam has no ladder.

. . . and one that would also have legs so it could walk up the river when it comes back.

"When I first came here to work," says Tuck, "The irrigators told me that I didn't have any problem. All I had to do was develop a fish that I could train to go through the holes right around the screens, and one that would also have legs so it could walk up the river when it comes back."

On a good *day* before irrigation came to the valley, the spring chinook in the Yakima River might number in the thousands. This summer there were 1500 *total*. A very bad year, but an improvement over the mid-70s when there were only a few hundred spring chinook in a season.

On one day recently, there was a single female chinook slowly circling and surfacing in the slack water below the west branch of the Wapato Diversion Dam. Wapato Dam is bisected by an island. The east branch has ladders that ease fish passage over the dam. The west branch has nothing.

The chinook had come up the wrong side of the island. After swimming more than 450 miles, over all of the mainstem Columbia River Dams, this 40-inch fish eventually died just short of her goal: the gravel spawning ground where her journey began.

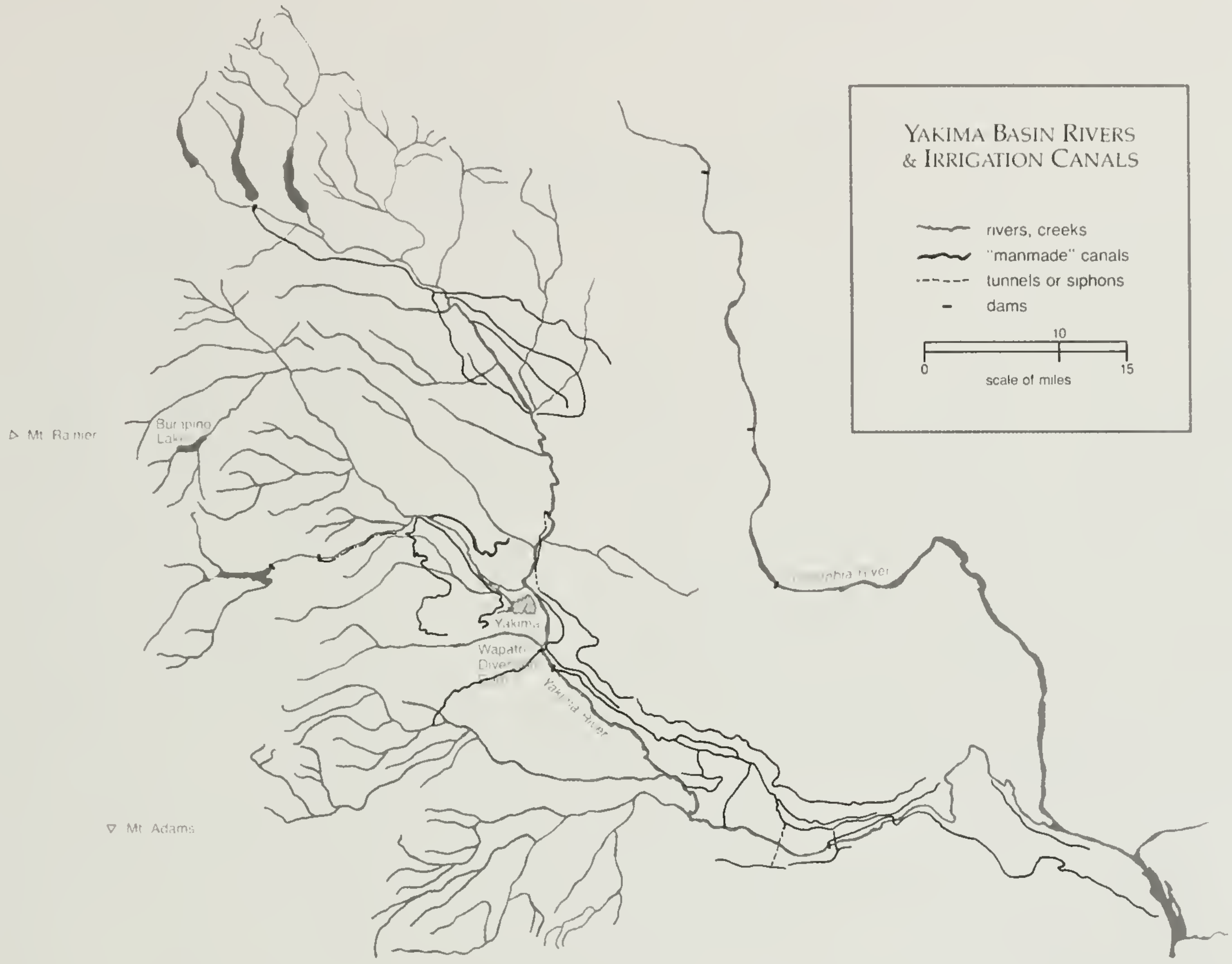
Tuck pointed her out. The next day he went back to see if he couldn't help her over the dam with a seine net. The channel was too deep. A few days later he found her dead on the gravel bars downstream. He recognized the fungus on her back fin.

"I've never seen fish stopped at Wapato, but I knew they weren't making it over. There's no ladder on that side. If there was more water she could have jumped the dam, but the diversion drained enough off to make it impossible. When I went to look for her I found others dead, too. Seven chinook in two hours. That's unheard of. Not even in a spawning survey [when biologists go out to assess the season's production] will we find many dead fish along the river."

This problem has a solution. Unlike the larger problem of water rights and water quantity, fish passage can be remedied. Better screens and ladders can be installed. There is even a tentative agreement between the tribes and the irrigators that this is the path to take at this juncture.

Recent passage of federal energy and water project appropriations marks the concurrence of Congress in this first Yakima Basin consensus. The appropriations will assure funding for improvements on passage facilities at Wapato, Sunnyside, Roza and Prosser Dams.

Both the irrigators and the Indian tribes see this as the first small step towards solv-



The Yakima Basin is crisscrossed with natural rivers and streams and more than 2,500 miles of man-made irrigation canals.

ing the bigger problems. Many of them also see these projects as the microcosm of the larger Columbia Basin problems and hoped-for solutions.

Walt Larrick agrees. "Everybody has strong ideas and positions and they're not too willing to budge from them. In the Yakima Basin you've got agriculture that's operated this way for a long time and they don't see any reason to change. On the other hand, you've got the fisheries that haven't had anything and they want everything now. Both sides realize that it's going to be a negotiated settlement, but they're reluctant to give in in the beginning for fear they'll lose something in the end.

"Seeing the government move on this helps get everyone else inspired to work on it, too. That's what it's going to take. Everyone's always talking about doing something, but no one ever does anything. It's a common complaint.

"I think the irrigators respect the tribe's treaty rights. They're just saying, 'I don't want you to take my water for your fish. I'll work with you to get *more* water.' There can't be a long lasting solution until both the tribes and the agriculture community are satisfied."

Bob Tuck joins in, "There are water rights issued to the farms and there are treaty rights that provide water for the fish. We're trying to do something for both of them. Irrigation is just one of the competing issues for the water. There are exactly the same issues throughout the Columbia Basin. The Umatillas have exactly the same problems, the Walla Wallas, the same thing. It's the same in each of the basins and sub-basins.

"The Yakima Basin is an obvious place to start the larger program. It's small enough so that it's do-able and identifiable. We've still got the potential to turn things around. There are still good spawning habitats. Conceptually you can see doing things in this basin. It's not overwhelming.

"Furthermore, if we can work these issues out through the Fish and Wildlife Program, we can save time and money. We can solve these problems in court, or we can find more water so no one has to lose. Going to court doesn't provide one new drop of water in the basin. These first projects at Wapato Dam and the others move us closer to the kind of coordination among entities that will bring back the fish." ■

Thermabilt
home opens to rave reviews

by Mickey Riley

There was standing room only at the "opening night" of one of Washington State's Thermabilt homes. The show actually began at nine on a warm summer morning as more than 50 people stood shoulder to shoulder at the Spokane home to watch the performance. The show was a "blower door" test. This is a test which gives one indication of a home's energy efficiency by measuring its air infiltration and leakage rates.

Scattered among the audience were the show's authors (members of the Northwest Power Planning Council), backers (representatives from the Bonneville Power Administration), and the director (Washington State Energy Office). The Council essentially wrote the script a year and a half ago when their Power Plan called for a demonstration program of 700 homes constructed regionwide to model conservation standards (MCS). The purpose was to demonstrate the costs and benefits of energy efficient construction as a means of conserving the region's energy resources. The homes are projected to use 60 percent less energy than a conventionally constructed home.

The demonstration program, funded by Bonneville, operates in Washington, Oregon, Idaho, and Montana. Each state has selected its own name. The State Energy Office, which administers the program in Washington, has selected *Thermabilt* as the name of the almost 300 homes now either completed or under construction in the state.

While several of the homes are presold, many are for sale and represent a good deal for consumers. The Energy Office and builders aim to have all homes sold and occupied by the fall so that data on energy consumption can be collected this winter.

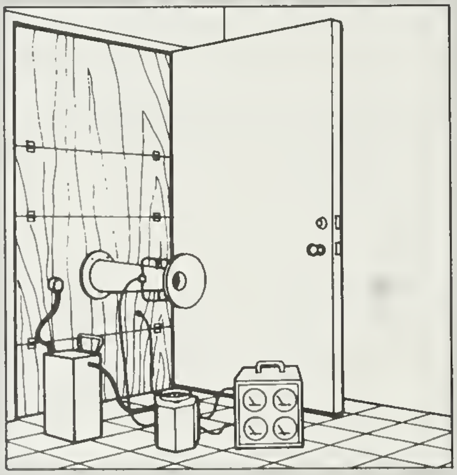
As with any script, the real test is in the actual performance. A blower door test measures the home's performance by indicating its air infiltration rate (how many air changes take place in the house in an hour). An average new home has 0.6 air changes per hour (ach), which means you would have to reheat (or cool) the air in the home over 14 times per day to maintain a steady temperature.

Many homes participating in the demonstration program aim for 0.1 ach natural infiltration depending on climate zone and design path. The Spokane home, built by Eagle Mountain Construction Company, came in at 0.3 ach.

"We are extremely pleased with the results," said Bob Goertz of Eagle Mountain, "but not really too surprised. We did put a lot of very hard work into it to be sure the home performed well. And although the learning experience accounted for some extra time, we figure we'll be way ahead of the game the next time we do it."

Council members, however, were surprised. "What's remarkable to me," said Chuck Collins, Council member from Washington, "is that a group of builders who had never built a home of this type before could build it so much tighter than the standards. We debated two years ago whether this was possible and decided it wasn't. It's surprising affirmation — and maybe even a criticism — of the standards."

A blower door consists of a fan installed and sealed into an exterior doorway. The fan either pressurizes or depressurizes the house. Instrumentation connected to the fan measures the air leakage rate, from which the number of air changes per hour is calculated.



Eagle Mountain is probably not your typical construction crew. The five-man team boasts degrees in chemical engineering, electronics, forestry, economics, and business administration. "We all met and worked together as Air Force fighter pilots over 20 years ago before deciding to start this business," says Goertz. "We moved to Spokane in 1979 and began building homes. The kind of construction we do addresses the whole spectrum of market needs, from the so-called 'affordable' range to superb custom."

This Eagle Mountain home is a four bedroom, two bath, 1,910 square foot home. The home has R-49 in the ceiling, R-19 in the walls, and triple glazed windows. It has a continuous vapor barrier and, like all homes in the demonstration program, an air-to-air heat exchanger to ensure the indoor air quality of a very "tight" well insulated home.

One of the more innovative aspects of this home is the use of an all weather wood foundation as opposed to the traditional concrete foundation. The chemical preservatives in the wood are pressure impregnated so they are permanent, water insoluble and non-leachable.

"The all-weather wood foundation means you don't have to wait around for good weather to get your foundation going," says Goertz, "and it's a lot less expensive in terms of time and material costs. This, and a relatively new, prefabricated trussed floor system also made of all weather wood, is tailor-made for the MCS home," says Goertz. "Both greatly facilitate insulating the foundation area and make it extremely easy to build to the MCS."

The builders have not yet completed the cost accounting on the homes, but their preliminary estimate is that the "extra" costs (i.e., the cost for building to this level of energy efficiency) came in right at the $3/sq.ft. predicted by the Council (costs can also vary somewhat by climate zone).

"We actually feel we can come in below that," says Goertz, "for two reasons. One is that this was our first effort using some of these construction techniques and there is always a 'learning curve' factor. The second is that we worked a lot of overtime to have the house ready by the time of this open house. Some of the supplies, such as the acoustical sealant, we had shipped from Seattle at great expense. We have since found the product here in Spokane at half the cost."

All productions have their critics, and the question of costs has been a major one for the demonstration program. Many builders feel the extra cost to build to these levels of energy efficiency will dampen the market for homebuyers. But Eagle Mountain and others feel that the reduced electrical bills make the homes more than cost effective.

"At 14 percent interest over 30 years with five percent down," says Merlin Hatch, Marketing Director of Eagle Mountain, "the monthly payments for the Thermabilt home actually come out $1 below payment for the same house without the energy saving features. And that's assuming that electricity rates will stay the same for the next 30 years, which we know they won't. For a first time homebuyer who can qualify for the 11.1 percent First-Time Homebuyer loan, it's possible to actually save $30 a month."

"So, although the Thermabilt home may cost a few thousand dollars more, the actual monthly costs to the homeowner are virtually identical," continued Hatch, "and that's what most consumers are concerned about — monthly costs."

The excellent performance of the Eagle Mountain Home during its blower door test gives every indication of a "hit." How well the hit plays will be determined this fall and winter when the home is occupied and the actual energy bills come in. For now, the Eagle Mountain crew, the Council, WSEO, and Bonneville are pleased with their opening night performance. ■

The Intertie: a Northwest Priority

It runs nearly a thousand miles — a giant electricity pipeline pumping power from the energy rich Northwest to water-shy California.

Since it was built in 1968, the Northwest-Southwest Intertie has earned the Northwest region over $1 billion from the more than 200 billion kilowatt hours of energy delivered to California. But that may be only the beginning of its potential.

Historically, most of the energy sold through the Intertie has been seasonal surplus electricity available during the spring run-off on a non-firm, interruptible basis. Even then, access to the Intertie for utilities with power to sell was limited since the lines themselves had limited capacity.

Now, the issue of access has ballooned in importance because the Northwest has considerable excess firm energy to sell. The Bonneville Power Administration, which owns most of the Northwest portion of the Intertie, has developed a system to determine what share of the Intertie energy sellers will get. This system is spelled out in what is called the Intertie Access Policy.

About the only thing that isn't controversial about that policy is its name. As of now, Bonneville has begun operating under an interim or "near term" policy which will be in effect until August 1986. After that, the Long Term Intertie Access Policy — to be proposed later this year — will go into effect.

The issue is so critical to the region that the Northwest's public utility commissioners have asked the Northwest Power Planning Council to "undertake an investigation and review" of Bonneville's Intertie Access Policy and related energy sales to California.

In a joint letter to the Council, the commissioners noted that the Council is "the only regional body with authority to coordinate both investor-owned and publicly-owned utilities." As such, they said, the Council is the appropriate body to set regional policy on these issues.

The letter was signed by Conley Ward, Jr., president of the Idaho Public Utilities Commission; Tom Schneider, chairman of the Montana Public Service Commission; Gene Maudlin, commissioner of the Oregon Public Utilities Commission; and Robert Bratton, chairman of the Washington Utilities and Transportation Commission.

In a rapid response, the Council took up the challenge at its August meeting in Kalispell, Montana. Council members voted unanimously to inform Bonneville that the Council would begin working with the public utility and regulatory bodies and other relevant parties to take an "active role" in developing an "oversight policy" on a long-term Intertie Access Policy, intertie size, and out-of-region sales.

Keith Colbo, chairman of the Council, subsequently told the commissioners, "The Council believes that the issues related to out-of-region sales are extremely important to the people of the Pacific Northwest and especially to the implementation of the regional power plan. We believe that these critical considerations require a full and complete examination in an open and public forum."

The Council also has had strong words for Bonneville's two-year near-term access policy. The most serious problem the Council found centered on the interim policy's failure to acknowledge the Bonneville administrator's obligation to act in a manner consistent with the Council's fish and wildlife program.

Bonneville reports it will deny access to the intertie wherever it would interfere with the agency's obligations to provide equitable treatment for fish and wildlife. There is, however, disagreement between the Council and Bonneville over the interpretation of these obligations as outlined in the regional power act.

The Council believes the policy should acknowledge the "consistency requirement" with the fish and wildlife program, while Bonneville's policy uses vaguer language, saying it will take the program "into account." The Council's fish and wildlife director, Janis Chrisman, says the debate is more than an exercise in semantics. She cites provisions in the policy which appear inconsistent with the power act as well as with the fish and wildlife program.

For one, the policy treats new resources — those not yet licensed or constructed — more strictly than existing resources. The inference the Council draws is that Bonneville might be more lax in its fish and wildlife obligations for existing projects. The Council believes the regional act does not allow different treatment for new and existing resources.

continued next page

Second, Chrisman notes, the policy could allow a loophole for operators and owners of existing resources to avoid complying with the fish and wildlife program. She explains, "Under the Bonneville proposal, it appears that a utility that wanted access to the Intertie could simply write a check instead of installing a bypass system or it could build a hatchery instead of providing flows. Both actions would undermine the program, particularly its emphasis on wild and natural fish production."

The Council also fears that, since the policy does not require sources of power to be identified, it would be possible to transmit power for a project which does not comply with provisions for protection and enhancement of fish and wildlife contained in the program.

Cogeneration is another controversial gap in Bonneville's interim policy, according to Edward Sheets, the Council's executive director. Cogeneration is the simultaneous production of energy for dual purposes from a fuel source. Because it is a less costly energy source than coal, the Council's two-year action plan specifically calls on Bonneville to "assist potential cogenerators in obtaining access to tie-lines."

The idea is to preserve cogeneration opportunities. While the resource is currently not needed in the region, cogeneration could be developed now for the California market. Then, if it were later needed in the region — which would occur in the next decade in both the Council's medium-high and high energy demand forecasts — it would be available.

However, unless developers see a current opportunity for selling cogenerated power, which the California market would provide, they are unlikely to develop the resource. The Council feels strongly that "priority wheeling (the transmission of power from one system to another) service" should be granted over the intertie for cogenerated power.

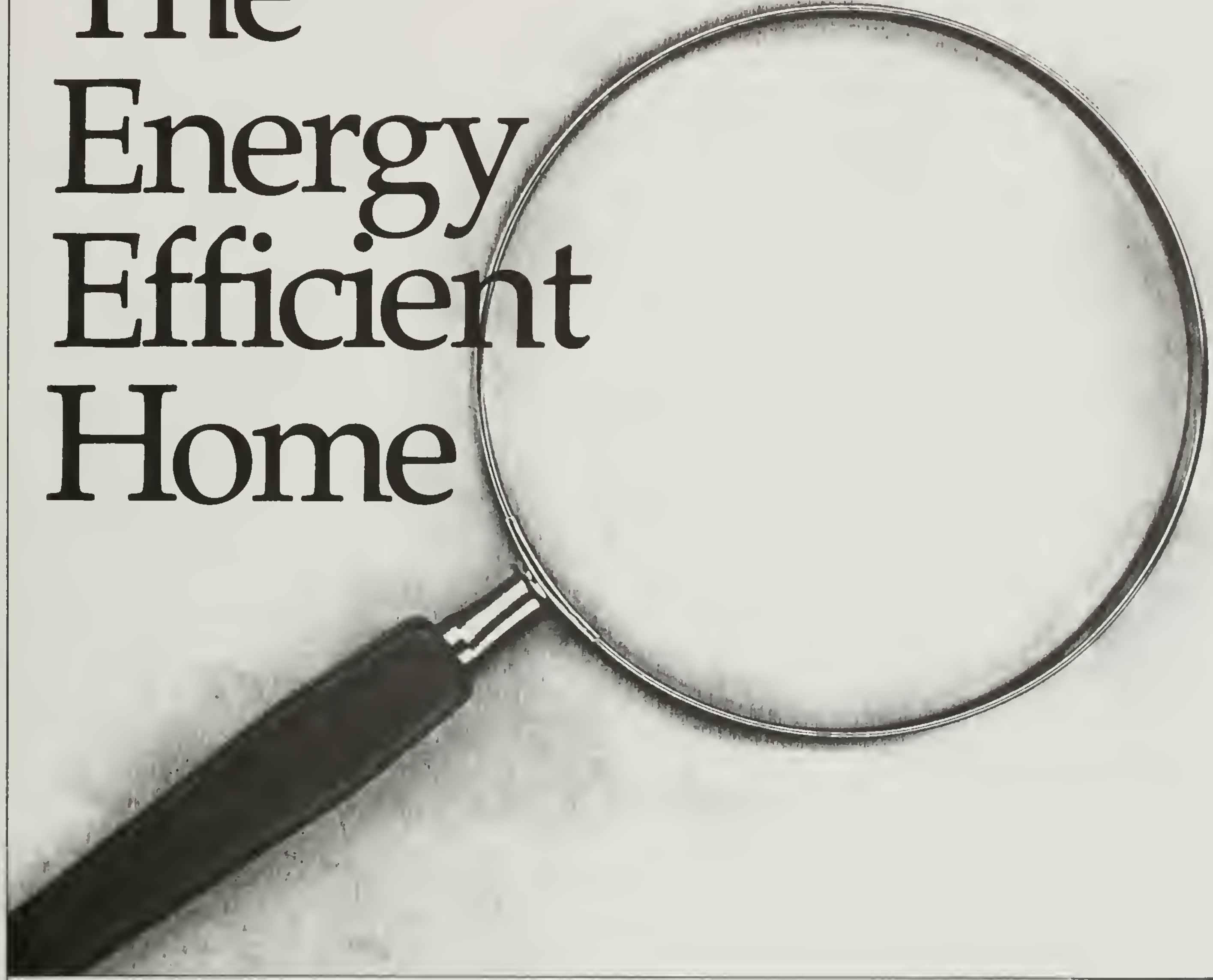
While these concerns were directed at the near-term policy which would run through August 1986, Council members also have the long-term policy in mind. As one public commenter at the Kalispell meeting put it, "You always run the risk that the short-term policy will just roll over into the long-term policy." ■ *–Editor*

About the only thing that isn't controversial about the Intertie Access Policy is it's name.

Montana Council members Gerald Mueller, top photo, and Bob Saxvik, lower photo on right, visit Champion Pulp Mill in Frenchtown, outside of Missoula, as a possible cogeneration site. The mill, which produces paper and cardboard, is considering utilizing waste heat to produce electricity.

Photos by Bernd Hoffmann

Tips for Spotting The Energy Efficient Home



by Mickey Riley

Since the mid-1970s, public awareness about energy costs has risen dramatically. One of the most obvious results was a shift from large gas guzzlers to smaller fuel-efficient cars. Today, consumers are becoming equally sophisticated about the energy consumption of the homes they buy.

Yet there exists no tool or criteria, such as the federal EPA mile-per-gallon rating, to aid the consumer in determining if the new home advertised as energy efficient is truly just that.

What follows are some general criteria to help new homebuyers evaluate whether the home they plan to buy is energy efficient. The criteria, based on the Council's Model Conservation Standards, apply to electrically-heated homes.

It should be noted at the outset that there are many designs and methods that can be used to achieve an energy efficient home. Designs using solar gain (a home with major south-facing window areas) or passive solar (southern orientation and some system to store the solar energy such as tile or brick floors or walls) as well as homes employing heat pumps could require less insulation than designs without these features. The geographic location of the home also determines the amount of insulation necessary with greater insulation required in colder climates. Buyers can contact their local or state energy office for details specific to their climate zone.

1. INSULATION

All insulation has an R-value which is its resistance value — the higher the R-value the greater the resistance to heat flowing out.

WALLS: no less than R-19 — this can be determined by looking at the depth of the window sills and frames which tell you how thick the walls are.

CEILING: no less than R-30 — look for one foot of blown or batt insulation in the attic.

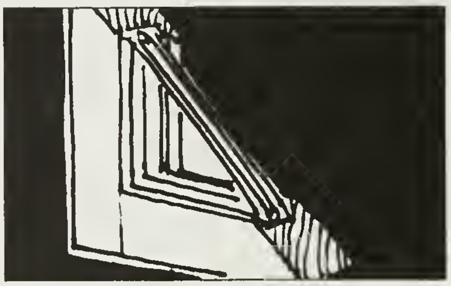
FLOOR: no less than R-19. You may be able to determine this by looking for at least six inches of insulation in the unheated basement ceiling or in the crawl space.

SLAB: if the home has a basement, look for two inches of rigid foam around the inside or outside perimeter (or ask the builder, if it's covered).

2. WINDOWS/DOORS

WINDOWS: double or triple paned windows with either wood frames or "thermally-improved" metal frames. Thermally improved frames incorporate insulating material within the frame that "breaks" the flow of heat through it.

DOORS: insulated core doors and/or well weatherstripped.



3. CONTROL OF AIR LEAKAGE

CAULKING AND WEATHERSTRIPPING: look for caulking where the frames of the doors and windows meet the siding, and weatherstripping (vinyl, metal, or foam rubber) where the windows and doors connect with their frames. This attention to detail indicates a builder who is conscientious about energy efficiency.

VAPOR BARRIER: vapor barriers protect the home against moisture problems and greatly minimize the amount of air leaking in and out of a home. Some builders may use a continuous (sealed where necessary) piece of plastic such as six-mil visqueen to "wrap" the house. This should be carefully sealed where there are breaks for plumbing and electrical outlets. Other methods include the use of rigid two-inch styrofoam that is sealed or taped where penetrated by nails, or foil-face batts with the seams overlapping.

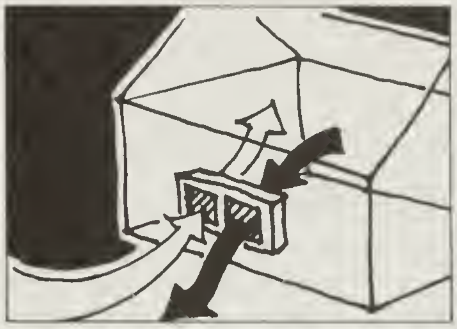
ENERGY

This checklist can serve as a good, somewhat generic, guide to determining if a home has the technical features to make it energy efficient.

Equally important is buying from a reputable and experienced builder. A reputable builder should be able to give you names of past clients who have actually lived in these homes and whose energy bills prove the home's efficiency.

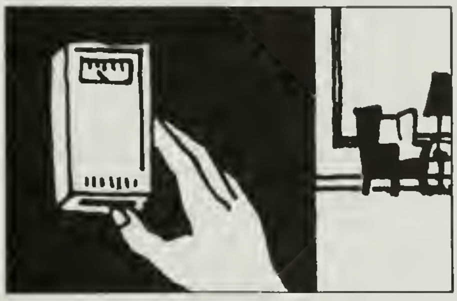
Buying an energy efficient home makes sense from a variety of perspectives. The most obvious benefit is lower energy bills. While no one knows how much and how fast electrical rates will rise in the future, it's a safe bet they won't go down. Most homes have a useful life of about 60 years. As rates rise, an energy efficient home will

4. VENTILATION



DEHUMIDIFIERS: are necessary to avoid humidity problems in well sealed homes, or

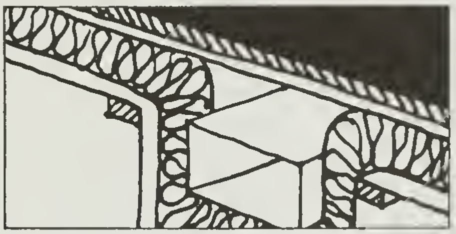
AIR-TO-AIR HEAT EXCHANGERS: for tightly sealed homes. The heat exchanger exhausts stale indoor air while transferring its heat to the fresh incoming outdoor air. A heat exchanger is important in a tightly sealed home to ensure indoor air quality. It has the advantage of saving heat thereby reducing energy needs.



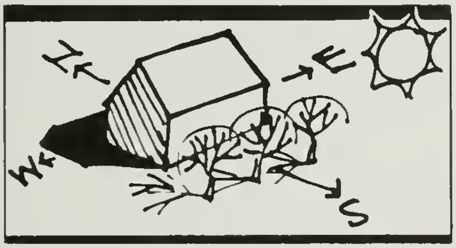
5. HEATING SYSTEMS

A well insulated and "tight" home will undoubtedly need a small heating unit. Check with the builder and/or local energy office for size requirements. A heat pump may be a cost-effective investment for large homes. A desirable feature is the use of separate thermostats in individual rooms or for those rooms used infrequently such as a utility room or basement.

6. DUCTWORK



In a well insulated and "tight" home, it makes more sense to have the ductwork within the living area and left uninsulated. If the ductwork is outside the living area (such as garage or basement), be sure it is insulated.



7. ORIENTATION

A home that has most of its windows on the south (and unshaded) side and very few windows on the north side will obviously benefit from solar gain — even in the often overcast Northwest. Some attention should also be paid to shading these windows (deciduous trees, overhangings, or awnings) in the summer to avoid overheating.

8. APPLIANCES

These products are now efficiency rated and consumers should look for the seal on refrigerators, washers, dryers, dishwashers, and other appliances indicating their energy efficiency rating. Also check product literature and warranties.

C✓H✓E✓C✓K✓L✓I✓S✓T

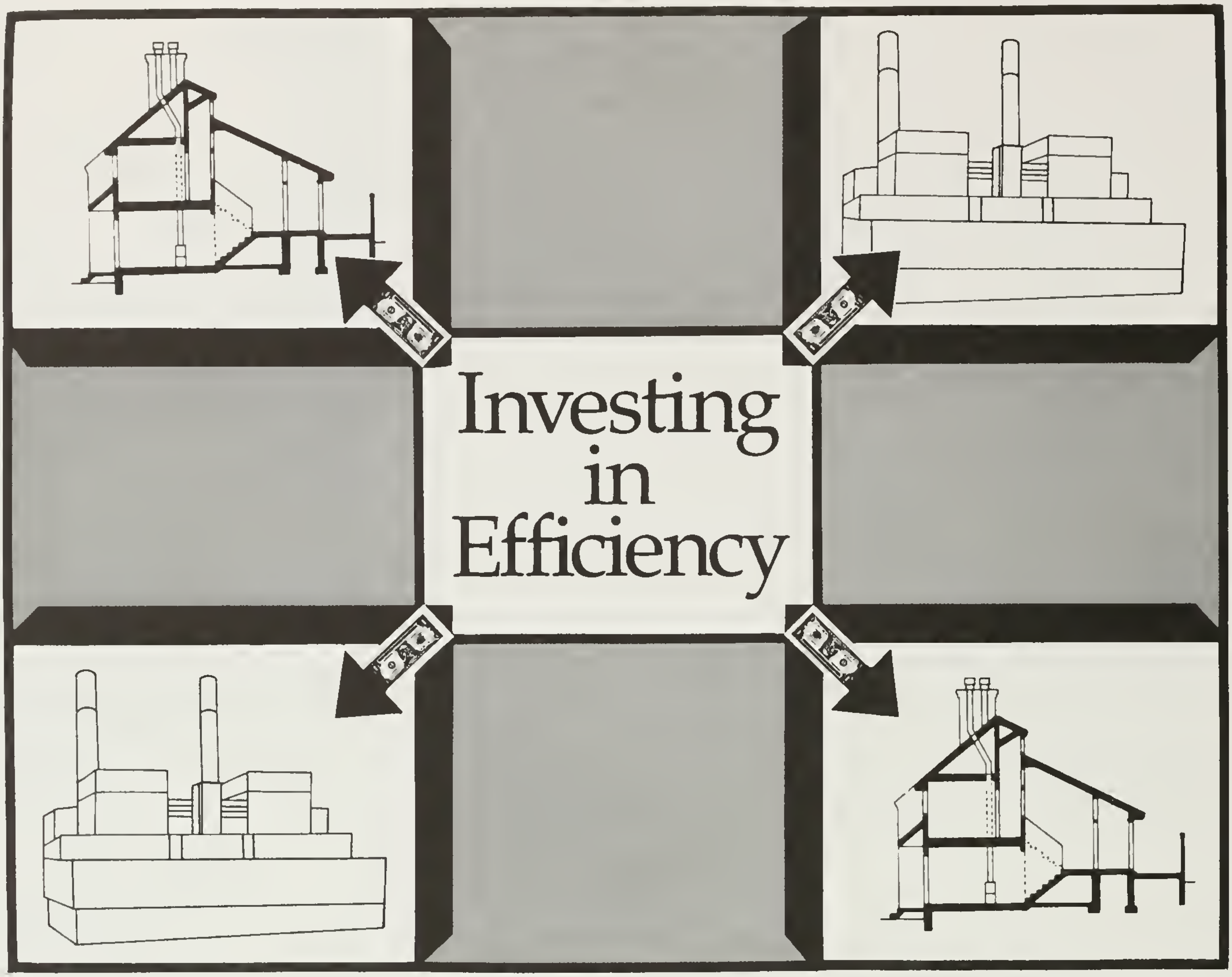
have greater resale value than an inefficient home.

There is also the issue of comfort. Well insulated homes are more comfortable because they have fewer drafts, they maintain an even temperature, and are cooler in the summer. They are also quiet homes.

Moreover, the investment in an energy efficient home actually benefits every ratepayer in the region by reducing the demand for power on local utilities. As more new buildings are made energy efficient, fewer utilities will have to turn to more expensive energy resources which drive up everyone's rates.

Buying an energy efficient home is a good choice from the standpoint of economics, comfort, and the future.■

Illustrations by Jim Taylor



Investing in Efficiency

by Carlotta Collette

During the next two years people throughout the Pacific Northwest will be asked to adopt building construction codes based on standards that set limits on the amount of electricity new homes should use for space heating. These new "model conservation standards," part of the Northwest Power Planning Council's power plan, establish what are being called "energy budgets." They are designed to save enough electricity in the Northwest, so that the need for new coal, oil or nuclear fueled electric power plants will be substantially reduced.

The electricity that will be saved by implementing these new building standards will cost the region (and thus the ratepayers) about half of what new coal plants would cost for an equivalent amount of energy. If the region is forced to build new power generating plants, regional electric bills will go up fast. Even without adding new electric plants the cost is almost certain to rise.

New energy conserving standards will do more than help soften the rise in rates over the long run. They will also help the ratepayers in these new, extremely well insulated homes. Homes built to the model conservation standards will use 60 percent less electricity for space heat than homes built to current building codes. That means utility bills that are much lower than they would otherwise be.

It sounds like a good deal, and it is. But, there is still no such thing as a "free lunch." To add the kinds of conservation features that the standards will require might raise the construction costs on a house in a particularly cold part of the region by as much as $4,500. In milder parts of the region, the costs to add super conservation to a new home during construction will average around $2,500. Costs will vary from builder to builder, and some homes that meet the new standards have even been built for less than current code houses.

Nonetheless, there is some concern that the addition of $2,500 or $4,500 to the overall cost of a new home will push some first-time homebuyers out of the market. In fact, adding that amount may delay a person's purchase of a home long enough for them to save the additional $375 to $675 that would be added to the down payment and closing costs (using an average down payment of ten percent and closing costs of five percent). It should not, however, exclude them from the market. The total increase in up front costs is less than the probable first month's payment on the mortgage. The purchaser could wait a few months, save the money that would have gone to the house payment, and then be ready to buy.

An alternative would be to negotiate with the lending institution to pay a smaller percent down (keeping the same effective down payment, but still slightly higher closing costs) and amortize the difference over the life of the loan.

The shelter industry in the Northwest has suggested a third alternative for those cases where the additional $2,500-$4,500 makes the new home appear unaffordable. Lending institutions recognize the advantage of incorporating the positive cash flow provided by lower heating bills into the formula for calculating overall housing affordability. Working with the Western Resources Institute in Seattle, they have developed a program for estimating the energy savings of houses.

It's called the Uniform Energy Rating System, and with it banks can compare the cost of buying a home with the costs of operating one. Typically, banks figure how much a person can afford to spend on housing by balancing that person's debts (including the new mortgage) with their income. Homes that conserve energy save their owners money. With the rating system, these savings can be weighed against mortgage payments when the bank is considering approving a loan for that home.

The program has caught on in Washington, particularly in the Seattle area. The Federal Home Loan Mortgage Company ("Freddie Mac") and the Federal National Mortgage Association ("Fannie Mae") have both endorsed the program. They are encouraging their lenders to increase the loan-to-debt qualifying ratios for potential buyers of energy efficient homes.

James R. Faulstich, president of the Federal Home Loan Bank of Seattle, wrote to Oregon lending institutions to urge them to adopt the program for their home loans. "Lenders and others in the housing industry need to be concerned about the ability of American homeowners to pay their energy costs," he wrote. "These increasing costs threaten the ability of American homeowners to keep up their mortgage payments. Reduced energy costs," he adds, "make homeownership possible for more people, and home improvements that save energy can finance themselves."

Using the rating system has enabled banks in Seattle to increase their loan approval rates by 3-5 percent. Several banks in Oregon have made policy decisions to implement the program, and banks in Montana and Idaho are currently studying it.

As more and more lending institutions begin to adjust their practices, more and more homeowners in the region will be able to take part in the best energy buy around. As more and more homes are built to the model conservation standards, the region will be acquiring the most flexible and least expensive energy resource available — efficiency. ■

SHELTER INDUSTRY PROGRAM PARTICIPATING LENDERS

As of August 1, 1984, the following lenders had made policy decisions to participate in the Shelter Industry Program. Several are currently lending money using the Uniform Energy Rating System; others are scheduled to begin soon. Contact the underwriting department in the offices listed below for current information on the program status.

American Savings Bank
P.O. Box 2037
Tacoma, WA 98401
206/272-8305

Bancshares Mortgage Company
P.O. Box 3277
Bellevue, WA 98009
206/455-6603

Bank of California
910 Fourth Avenue
Seattle, WA 98164
206/587-6100

Bank of California
P.O. Box 3121
Portland, OR 97208
503/225-3636

Deseret Pacific Mortgage
P.O. Box 58990
Seattle, WA 98188
206/575-8011

Fairchild Mortgage
P.O. Box 33670
Seattle, WA 98133
206/367-9470

Great Western Union Federal S&L
11210 S.E. 8th
Bellevue, WA 98009
206/451-2060

Old National Bank
P.O. Box 1787
Seattle, WA 98111
206/447-2878

Pacific First Federal
11 Pacific Avenue
Tacoma, WA 98401
206/383-2511

Peoples Bank
P.O. Box 720
Seattle, WA 98111
206/344-3690

Peoples Mortgage Company
P.O. Box 1788
Seattle, WA 98111
206/344-4672

Pioneer First Federal S&L
P.O. Box M
Lynnwood, WA 98046
206/622-9865

Premco
P.O. Box 97018
Bellevue, WA 98009
206/462-7111

Prudential Bank
1100 Third Avenue
Seattle, WA 98101
206/382-7500

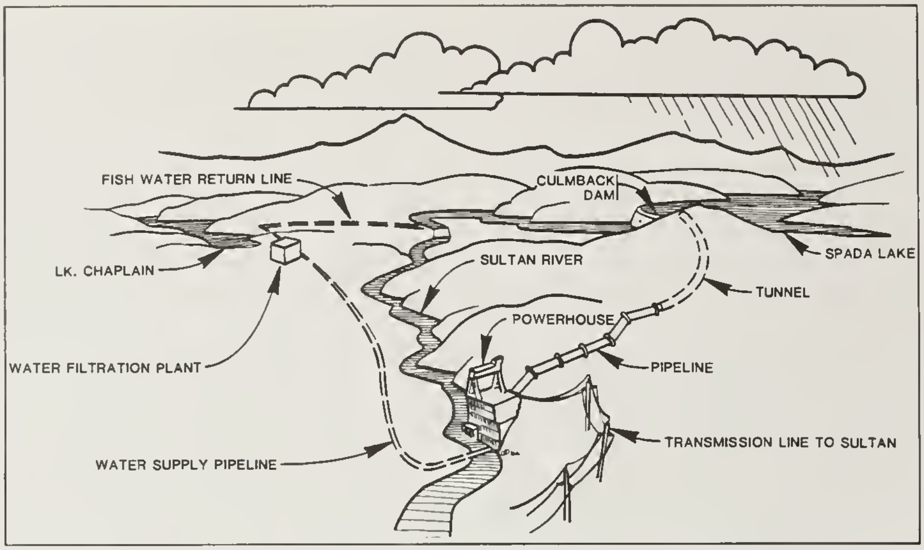
Rainier Financial Services
P.O. Box 990
Seattle, WA 98111
206/621-5311

SeaFirst Mortgage
Fourth & Blanchard Building
Sixth Floor
Seattle, WA 98121
206/583-7078

United Bank
P.O. Box 1637
Tacoma, WA 98401
206/572-5220

Washington Mutual Savings Bank
P.O. Box 834
Seattle, WA 98111
206/464-4400

Westside Federal S&L
P.O. Box 66220
Seattle, WA 98166
206/244-4950



Cutting Cleanly Through the Wilderness:

There's a great compromise made every time a new hydroelectric project is developed. By definition hydro projects go where there's moving water, and, more often than not, moving water finds its way through some beautiful countryside. Hydroelectric projects usually require dams. To build a dam the river must be diverted and the land around it can be seriously damaged. Trees are cut away, earth moved, wildlife habitats disrupted and fish runs cut short. That's often the bargain made, a tradeoff of resources, wilderness for electricity.

That bargain was cut more cleanly at the recently dedicated Henry M. Jackson Hydroelectric Project on the Sultan River in western Washington. As a result of the effort and care put in for the environment and ecosystem, the project was given the 1984 Environmental Excellence Award by the Washington State Ecological Commission.

There are few more beautiful patches of countryside than the area of the Sultan River in the foothills of the Cascade Mountains. But, the Sultan Basin is also a perfect site for hydro development. The basin is a diamond-shaped bowl with a narrow gorge at its base, and it receives an astounding 11 feet of rainfall each year.

That combination proved irresistible as early as 1917 when the nearby city of Everett, Washington obtained permission to divert some of the Sultan to provide drinking water. The city built a dam and redirected some of the river through a tunnel into Lake Chaplain, the site for the city's water storage.

After World War II, when the rest of the Northwest's hydro potential was being developed, the Snohomish County Public Utility District secured permission from the Federal Power Commission to study the basin for hydroelectric possibilities.

That led to an application for a hydro license in 1957, and a two-phase plan to develop the river for both additional water supply and electricity. Phase I led to the construction of 200-foot high Culmback Dam, creating the Spada Lake reservoir for additional water storage in the basin.

Phase II, the electric generating facility, was postponed until it could be more cost effective. When the Bonneville Power Administration filed its warning that there might not be enough power to meet projected regional growth in the 80s, the Sultan River project suddenly appeared not only cost effective, but possibly essential.

The problem then became one of slipping massive earthmoving and drilling equipment into the vicinity of the two drinking water storage lakes, on a river that supports an important fisheries resource and alongside delicate shoreline wildlife habitats, without causing irreparable harm.

The Snohomish PUD called for detailed studies on how to protect the water quality from siltation, pollution from the large amounts of petroleum that would be brought into the area and temperature variations that could endanger the fish. They were also concerned that such a massive undertaking should not permanently scar the landscape.

When contracts were let on the project's construction, the study recommendations were written in and environmental supervisors were hired to monitor the ongoing work for its attention to the ecology of the area.

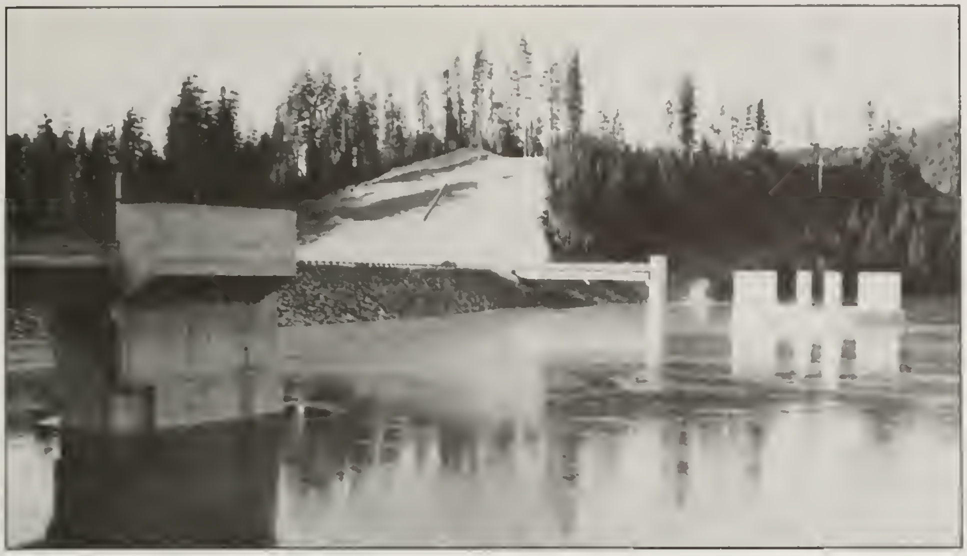
The project itself was massive. A four-mile long and 14-foot in diameter tunnel was drilled through Blue Mountain. It connects up with a four-mile long buried pipe and the two draw water from the newly enlarged Spada Lake reservoir. Culmback Dam and its spillway were both raised to increase the capacity of the reservoir. The intake structure from there to the tunnel and eventually back to the Sultan River eight miles below the dam was designed so that water can be drawn from different levels depending on the optimum water temperature needed in the river for fish protection.

At the end of this eight-mile pipeline sits the powerhouse, where four turbines generate up to 112 megawatts of electricity, enough to power 20,000 homes. Not finished yet, half of the water from the powerhouse is ducted through yet another four-mile long buried pipe to Lake Chaplain where it is expected to meet the water supply needs of the city of Everett through the year 2020.

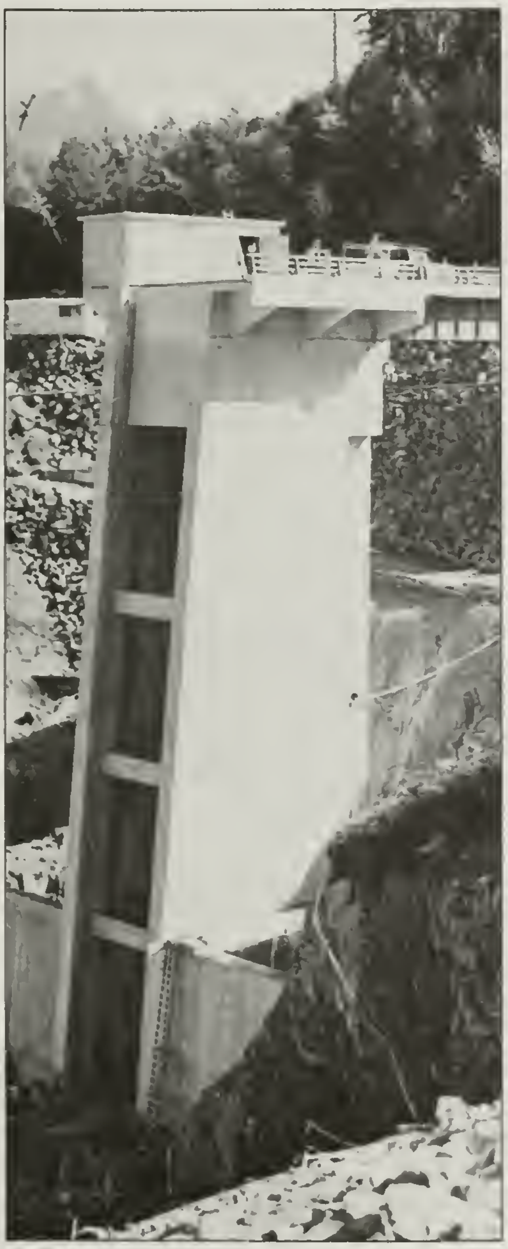
In addition to maintaining a healthful water temperature for the fish, the Henry M. Jackson Project is designed to return water from Lake Chaplain through yet another pipeline to Culmback Dam in order to assure adequate flows for fish rearing and spawning seasons.

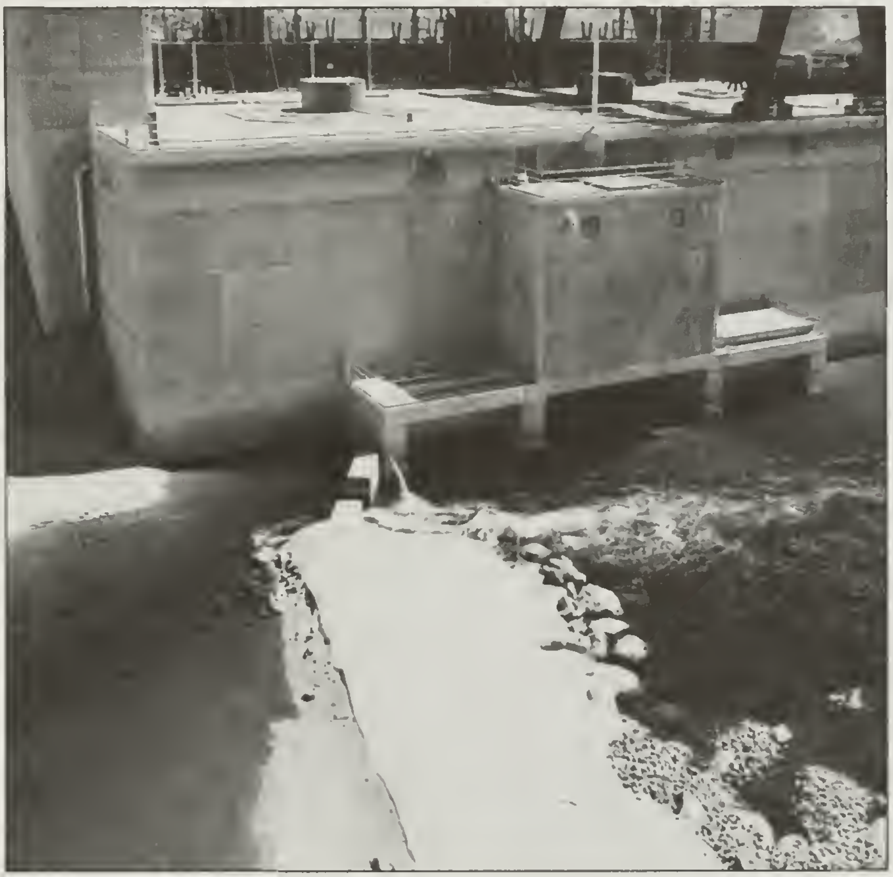
Adult fish heading back up the river are guided by an attraction berm near the powerhouse. Without it they might be drawn in by the turbine discharge. Instead, they are led toward the river's own flow.

On June 1, 1984, the Henry M. Jackson Hydroelectric Project began its commercial operation. Perhaps most rare among its accomplishments — it was on schedule and on budget! ■ **by Carlotta Collette**



The Henry M. Jackson Hydroelectric Project





Like the tip of an iceberg, the concrete cap of the eleven story water intake structure above Culmback Dam rises only slightly out of the water (top photo). Behind it, in the center of the photo, a terraced cut in the hill reduces the possibility of slides blocking the outlet from the dam.

The whole 110-foot-tall intake structure appears in the photo at left. This design allows water to be drawn from varying depths in the reservoir. Because the reservoir (Spada Lake) was significantly enlarged as the dam was raised, the water temperature at some depths are cold enough to endanger fish. With the choice of three water levels, proper water temperatures can be maintained.

Another fish protection device can be seen in the photo above. Fish migrating upstream tend to head into the fastest flows. To keep them from going towards the turbine outlets in the dam's powerhouse, an attraction berm was built alongside the powerhouse. This berm increases the river's velocity enough to catch the attention of the fish and lure them away from the deadly turbines.

Photos and map courtesy of Snohomish County PUD

SPEAKING OUT

ON FISH & WILDLIFE

Mr. Chairman, I have come to comment about amendments to the fish and wildlife program.

This was repeated in four states this past summer as government officials, fishermen, tribal leaders, industry spokespersons, consumer advocates and fish biologists gathered in meeting rooms throughout the region to tell the Northwest Power Planning Council what they thought about proposed amendments to the Columbia River Basin Fish and Wildlife Program.

Most speakers were overwhelmingly in favor of the program but many had concerns. Some wanted actions deleted, others wanted actions strengthened, while others were not sure what they wanted, only that there was a problem in need of correction. All in all, it was a major example of the Northwest's unique public involvement process. Perhaps no other region's citizens have so much of an opportunity to participate in decisions about a regional resource.

Here is a sampling of some of the comments. The Council members and their staff are currently studying these and other comments and will make a final decision on the amendments in October.

by Ruth Curtis

First I want to assure you that Public Power supports the restoration of healthy fish runs along the Columbia River system and, second, I want to acknowledge the utility industry's responsibility to help pay for its fair share in rebuilding the fish resource.

We would remind you, third, that power production is but one reason behind the fish depletion on the Columbia. Other users have contributed to the depletion and we respectfully suggest that the other users should also help pay the bills.

Fourth, we are concerned that any mitigation measures meet two effectiveness tests – cost effectiveness and biological effectiveness. We ask therefore, that any measures you propose not only be the least expensive means to accomplish a stated purpose but that it be the safest and most efficient means.

DAN OGDEN, PUBLIC POWER COUNCIL
VANCOUVER, WASHINGTON

. . . Implementing the Yakima River passage improvements has proven more difficult than many of us thought. The many roadblocks which surfaced following adoption of your program appear to have finally been overcome and needed improvements can now proceed. We accept the schedule developed for implementation that appears in the draft action plan and will actively work to ensure this task proceeds in a timely fashion. Your oversight of implementation must continue.

WILLIAM YALLUP, YAKIMA INDIAN NATION
TOPPENISH, WASHINGTON

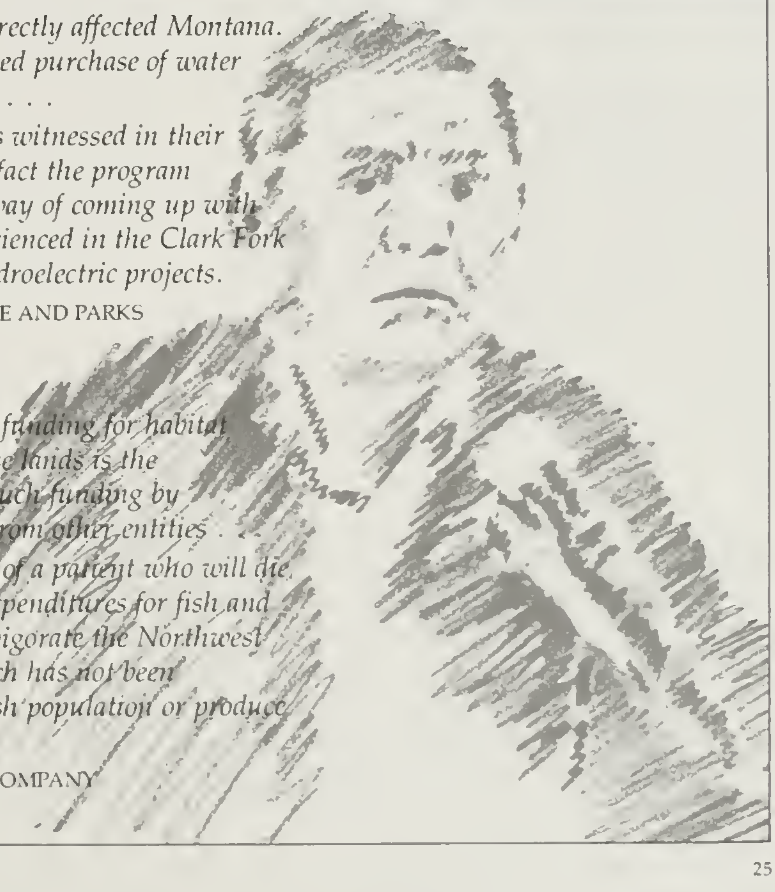
Well, gentlemen, I have come here today to enlist your aid in pushing drugs. I would enjoy seeing more of our young people have the opportunity to become addicted. The only thing is, the drug I'm referring to is not heroin, or cocaine or marijuana, it is fishing. It's addictive all right, but it's a positive addiction . . .

I believe that money spent on improving or promoting fishing or hunting is an investment, an investment that repays itself many times over in dividends to society.

JACK TENTOR, THE FISHERMEN OF THE SEVEN BAYS AREA
LAKE ROOSEVELT, WASHINGTON

Many fishery improvements are getting underway. Some are being accomplished, such as removing barriers to natural spawning grounds, improving habitat, providing acclimation ponds. Bank vegetation and stabilization work are all effectively being accomplished. And we agree that more needs to be done to restore the anadromous fish runs. Our concern, as I say, lies in the capital expenditures costing millions of dollars without adequate analysis of the benefits of their costs relationship.

JOE BREAZEAL, ALUMINUM COMPANY OF AMERICA
VANCOUVER, WASHINGTON



There was only one amendment in the process that directly affected Montana. . . . and that affected the Painted Rocks or the proposed purchase of water from Painted Rocks Reservoir in the Bitterroot River. . . .

Our frustration lies in the resistance of the utilities as witnessed in their submission of the amendment and requesting that in fact the program measure be dropped. Yet, they offered no alternative way of coming up with mitigation for the losses of migratory fish we've experienced in the Clark Fork Basin as a result of the construction of those three hydroelectric projects.

PAT GRAHAM, MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS
HELENA, MONTANA

We are very concerned about proposals for Bonneville funding for habitat restoration on federal lands. Protection of fish on these lands is the responsibility of the controlling federal agency. Any such funding by Bonneville would be in lieu of expenditures required from other entities . . .

. . . The Columbia River system is not in a situation of a patient who will die if an experimental operation is not performed. Any expenditures for fish and wildlife measures takes funds away from efforts to invigorate the Northwest economy, and a large-scale change to the system which has not been adequately tested might cause the loss of a resident fish population or produce other unforeseen consequences.

LEAYESH JOHNSON, PACIFIC NORTHWEST GENERATING COMPANY
PORTLAND, OREGON

Now, Idaho's troubles will be over if we can harness the dams all the way along. I mean harness them, put the bridle on them and the whole business, the front and the back of those dams, so no fish can get through into the turbines.

CAROLINE JOHNSTON
MISSOULA, MONTANA

If you could have seen the Columbia and Indian fisheries that existed on the Colville Reservation prior to Grand Coulee and Chief Joseph Dam, you could better understand the frustration, the feeling of utter loss of the Colville people as they have seen those fisheries wiped out forever. . . . the tribe has sought to mitigate their losses caused by Grand Coulee and Chief Joseph Dam on the Upper Columbia River (by) the development of a resident fish hatchery. . . .

. . . The Colville tribes have waited a long time to see the reality of fish once again on the reservation. For that reason I come before you today to pledge whatever technical, political and other assistance to Bonneville Power, Corps of Army Engineers, or to any participating agency or government on behalf of the Colville Confederated Tribes.

ANDREW JOSEPH, COLVILLE CONFEDERATED TRIBES
NESPELEM, WASHINGTON

We will work with the agencies as long as their requests and the reports, both the mitigation status reports and the mitigation plans, if any, for company facilities are reasonable and the evidence clearly indicates that construction and/or operation of the company facilities has adversely impacted wildlife. The company does not believe it should be a party to unnecessary studies or the spending of ratepayer money without clear and unequivocal evidence that the construction and operation of the company facility has adversely impacted wildlife.

DONALD BARCLAY, IDAHO POWER COMPANY
BOISE, IDAHO

. . . It's always been kind of a paradox to us that there has been so much emphasis on the ocean fishery and such little emphasis on the lower river fishery. We are very gratified to see that in the new amendments there are some additional measures which specifically address the lower fishery harvest.

MONTE RICHARDS, IDAHO DEPARTMENT OF FISH AND GAME
BOISE, IDAHO

The Commission is pleased that the Council includes habitat improvement projects as a major component of the program amendments. We are also pleased that the Council will accept recommended measures for some upper river systems such as the Clearwater in Idaho, and that it is moving forward with long overdue projects in the Wenatchee and Similkameen drainages.

We are troubled, however, by the number of rejected habitat measures, particularly those in the Umatilla and Grand Ronde River systems. Many of these proposed projects are biological necessities.

ALLEN PINKHAM, COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION
PORTLAND, OREGON

Speaking of court actions, early in the Fish and Wildlife Program development our attorney, Howard Arnett, explained to the Power Council that the Warm Springs Tribes looked to the program as an alternative to costly and divisive litigation.

DELBERT FRANK, CONFEDERATED TRIBES OF THE WARM SPRINGS RESERVATION
WARM SPRINGS, OREGON

I'm very concerned about Section 504 . . . which regulates juvenile migrating salmon and steelhead, and I think it very important that this section of the draft amendment document be adopted by this Council.

ROBERT PEEBLES
CANBY, OREGON

We agree in principle that a high priority should be accorded to achieving increased survival levels of juvenile anadromous fish as they migrate to the sea in the Columbia River Basin. We are concerned that the proposed method of prioritizing through inclusion of the five-year action plan as a specific program measure may be counter-productive . . .

. . . The Corps will have difficulties in implementing all the measures proposed for Corps action in the five-year program because of budget constraints.

COLONEL JAMES HIGMAN, U.S. ARMY CORPS OF ENGINEERS
PORTLAND, OREGON

. . . The long-term goal of the Fish and Wildlife Program should be to restore the anadromous fish runs of the Columbia River to pre-hydro power amounts taking into consideration, of course, losses from other causes not related to hydroelectric development.

JIM SOFRA, PACIFIC FISHERIES ENHANCEMENT CORPORATION
FLORENCE, OREGON

The proposed measure 804(e)(8) more clearly defines the status of white sturgeon in the program. These fish become increasingly more important to the fisheries of the basin. Relatively little is known of their life history, habitat needs, and stock strength. Studies now possible under the language of this measure should prove invaluable in the restoration and enhancement of this resource.

LLOYD PHINNEY, WASHINGTON DEPARTMENT OF FISHERIES
OLYMPIA, WASHINGTON

In Bonneville's view, perhaps the most notable among the amendments of the proposed Fish and Wildlife Program are those which incorporate new approaches to program implementation, . . . most particularly, the five-year action plan which institutes schedules, periodic reporting to the Council, and the development of the implementation work planned by Bonneville and others.

We recognize that these will impose a substantial burden on . . . BPA and we also recognize that they will tend to blur the respective planning and implementation roles of the Council and Bonneville.

JANET MCLENNEN, BONNEVILLE POWER ADMINISTRATION
PORTLAND, OREGON

COUNCIL PUBLICATIONS ORDER FORM

Please send me a copy of the following publications of the Northwest Power Planning Council.

- ☐ Northwest Power Planning Council's Fourth Annual Report
- ☐ Power Plan Amendment for Program Design 1E
- ☐ Power Plan Amendment for Action Item 14.1
- ☐ Proposed Amendment and Issue Paper on Surcharge Methodology
- ☐ Staff Working Paper on Issues in Economic & Demographic Forecasts
- ☐ Status Report on Regional Economy and Loads
- ☐ Issue Paper on the Value of Increased In-Region Sale of Interruptible Power

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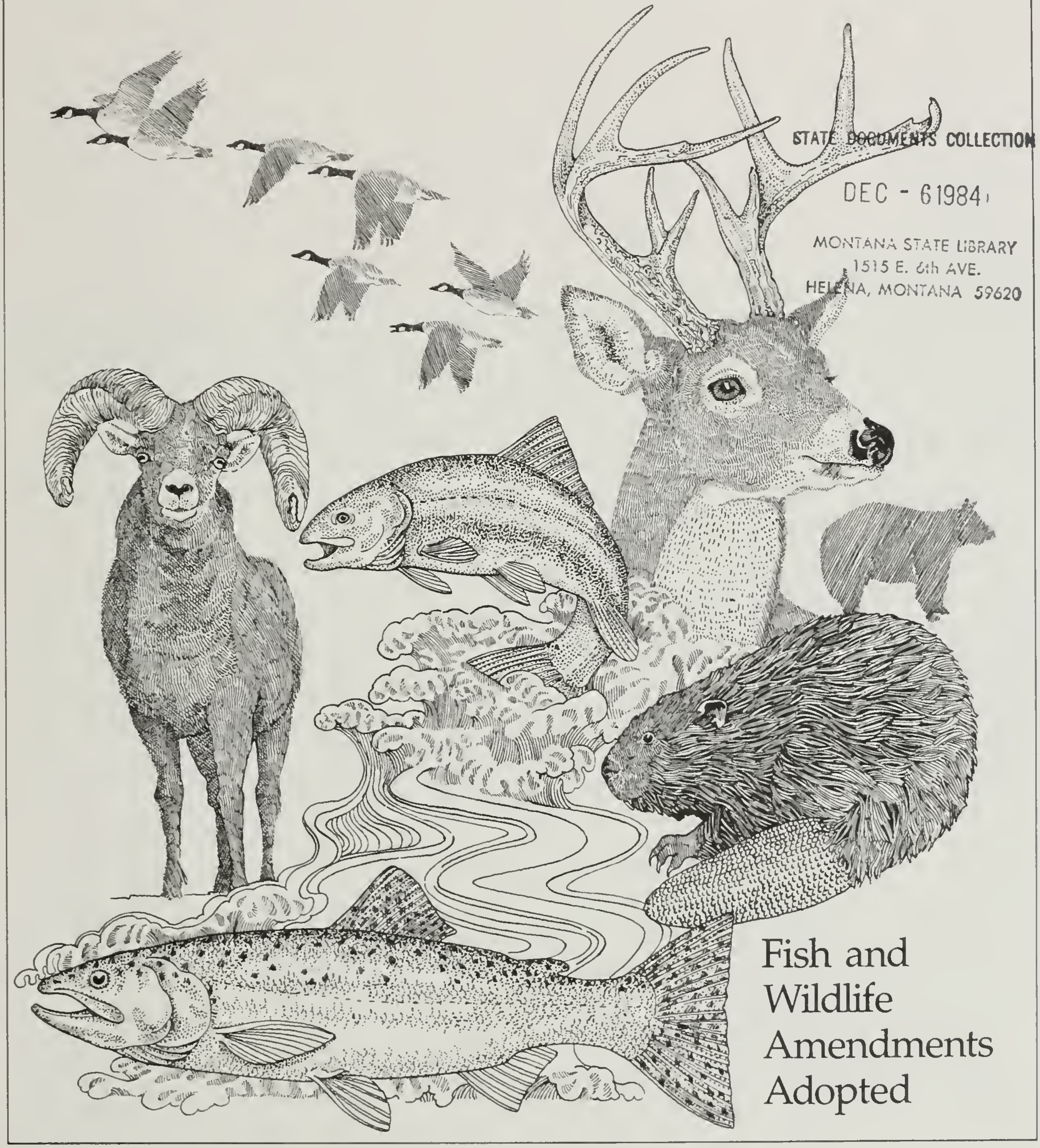

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NORTHWEST
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The Northwest Power Planning Council is required to develop a program to restore the Columbia fisheries and a regional electric energy plan, to be carried out by the Bonneville Power Administration, emphasizing cost-effective conservation and renewable resources
Editor: Dulcy Mahar
Graphic Design: Linda Sawaya, Linda Sullivan

EDITOR'S NOTES

This issue is like the Roman god, Janus, who had two faces — one looking back and one looking forward. Our lead story deals with the closure of the first fish and wildlife amendment process. Our centerfold covers the beginnings of developing the new power plan, a process that will run throughout 1985.

That process is the main reason for the special questionnaire in the centerfold which solicits your help in improving our public involvement and information programs. Please take the trouble to fill it out. And, if your primary interest is in fish and wildlife issues, simply use the questionnaire to discuss those issues and ignore the power topics. We are interested in all viewpoints, not just those dealing with the new power plan.

You may have noted two graphic artists listed. Our resident artist, Linda Sawaya, is recovering from a broken arm (her left fortunately). While she was able to give us direction and oversight, the major design execution was in the capable hands of Linda Sullivan, a free lance designer.

●

We would like to note a correction to the last issue. A story on the Yakima River Basin referred to an annual agricultural yield of between $2 and $4 million. Those figures should have been $200 and $400 million. The zeroes, which make quite a difference, were inadvertently dropped when the writer transcribed her notes.

Cover illustration by Sharon Torvik

CALENDAR

November 28-29 — Northwest Power Planning Council Meeting in Portland, Oregon.

November 28-30 — World Energy Engineering Congress in Atlanta, Georgia. Contact Albert Thuman, Association of Energy Engineers, 4025 Pleasantdale Road, Suite 340, Atlanta, Georgia 30340, (404) 447-5083.

December 11 — Special Northwest Power Planning Council meeting with the region's public utility commissioners in Portland, Oregon. Open to the public.

December 19-20 — Northwest Power Planning Council Meeting in Boise, Idaho.

January 9-10 — Northwest Power Planning Council Meeting in Seattle, Washington.

February 18-20 — Energy Management Congress presented by the Association of Energy Engineers in Los Angeles, California. Contact Association of Energy Engineers, 4025 Pleasantdale Rd., Suite 340, Atlanta, Georgia 30340 (404) 447-5083.

February 26-27 — Workshop on Measuring the Thermal Performance Characteristics of Windows in Gaithersburg, Maryland. Sponsored by the Building Thermal Envelope Coordinating Council and the National Bureau of Standards. Contact R. P. Tye, Dynatech R/D Co., 99 Erie St., Cambridge, Massachusetts 02139 (617) 868-8050.

Compiled by Ruth Curtis

We've moved . . .

As of November 1, 1984, the Northwest Power Planning Council's central office address is:

**850 SW Broadway
Suite 1100
Portland, OR 97205**

Our phone numbers remain the same.

IN THE NEWS

Council, PUCs set special meeting

Public utility commissioners from Idaho, Montana, Oregon and Washington will meet with the Northwest Power Planning Council to discuss sales of Northwest electrical power outside the region. The special meeting, the first of its kind in the region, is scheduled for 9 a.m., December 11 in Portland, Oregon at the Council's new offices (see box). The meeting will be open to the public.

"Power sales outside the region are a critical issue for both the Council and the public utility commissions," Charles Collins, chairman of the Council, explained. "Without proper planning, such sales could turn the Northwest into an energy farm for the Southwest, particularly California. The sales could hurt ratepayers, damage our environment, and erode the region's 20-year power plan. On the other hand, the right kind of sale, with proper planning, could help reduce rates for Northwest consumers over the next several years by having California pay for the Northwest surplus power."

The Council is developing a regional policy on long-term power sales out of the region and on access to the Northwest-Southwest Intertie, the delivery system for the power. Once developed, the policy will become part of the Council's power plan.

Earlier this year, the commissioners had sent a joint letter to the Council supporting the Council's leadership role in developing a policy for such sales. The Council is "the appropriate body to set regional policy on these issues," the commissioners wrote. The letter was signed by Conley Ward, Jr., president of the Idaho Public Utilities Commission; Tom Schneider, chairman of the Montana Public Service Commission; Gene Maudlin, Oregon Public Utility commissioner; and Robert Bratton, chairman of the Washington Utilities and Transportation Commission.

Council considers exemptions for MCS

Potential exemptions to the model conservation standards are under consideration by the Northwest Power Planning Council. The standards were designed for adoption into building codes for new electrically heated residences and for all commercial structures. Adoption of the standards throughout the Northwest could save the region from two to four coal plants.

Three conditions have been identified as areas which merit discussion over possible exemptions. First, some parts of the Northwest have both low population densities and little new construction. Second, several utilities have significant long-term projected power surpluses.

Third, parts of neighboring states fall within the regional power act's definition of the region but are outside Idaho, Montana, Oregon and Washington. This raises a question about representation since no hearings have been held in these states on the model conservation standards.

The Council has prepared an issue paper on the subject (see back cover for order form) and is considering entering into a rulemaking procedure to amend the power plan. Public hearings and comment periods would precede any final decision.

Groundbreaking held for Yakima facilities

Secretary of the Interior William P. Clark and members of the Northwest Congressional delegation participated in a groundbreaking ceremony October 25 at Washington's Sunnyside Diversion Dam. The event marked the first of several major projects designed to restore fish runs in the Yakima River Basin. ▶

Treaty talks between the U.S. and Canada aimed at preventing overfishing of anadromous fish in the Pacific ocean are currently underway. Support for the treaty was the subject of a news conference earlier this month cosponsored by the Northwest Power Planning Council (represented by Donald Godard, second from right), the Columbia River Inter-Tribal Fish Commission, and the Oregon Department of Fish and Wildlife.

Oregon Dept. of Fish & Wildlife photo

Charles Collins, chairman of the Northwest Power Planning Council, was master of ceremonies.

The Yakima fish passage improvements are a key step toward restoring the basin's fish runs, which once ran as high as 600,000 fish annually and now number only about 2,000. The fish enhancement facilities, which are expected to cost up to $40 million, should increase salmon and steelhead runs in the basin tenfold.

The restoration of the Yakima runs are a high priority in the Council's Columbia River Basin Fish and Wildlife Program. This summer, the U.S. Congress paved the way to fulfilling that program by approving appropriations for the enhancement projects.

The facilities — ladders to move adult salmon and steelhead over the dams and screens to deflect young fish away from irrigation canals — will be built at more than 20 sites along the Yakima River. The Bureau of Reclamation and the Bonneville Power Administration (who cosponsored the groundbreaking event with the Council, the Yakima Indian Nation, State of Washington and the Yakima River Basin Association of Irrigation Districts) will be the major contributors of funds for the facilities.

Improvements will include work at Prosser Diversion Dam, Toppenish Creek/Satus Unit diversion, Old Reservation Canal diversion, Wapato Diversion Dam, Roza Diversion Dam, and Easton Diversion Dam. A right bank fishway will be installed at Sunnyside Diversion Dam, and a west branch fishway at Wapato. New screens to deflect young fish away from the irrigation canals will be installed at Sunnyside, Roza and other dams.

Groundbreaking ceremonies for the first of several fish passage facilities in the Yakima River Basin were held in Washington state. (See related story)

Bureau of Reclamation photo

Issue paper discusses anadromous fish goals

To what extent are salmon and steelhead losses in the Columbia River Basin due to hydroelectric development? This is the first question the Northwest Power Planning Council will try to determine in a planned goals study. After assessing losses, the Council will determine goals for its Columbia River Basin Fish and Wildlife Program, as well as methods to achieve those goals.

The Council has issued a major issue paper on "Losses, Goals, and Program Planning" in an attempt to solicit public comment on these subjects. The goals study is part of the fish and wildlife program. A group of fish and wildlife agencies and Indian tribes have responded to the program with a proposal for assessing hydropower-linked fish losses, establishing program goals, and undertaking other program activities.

The Council staff paper will examine that proposal and provide alternatives and related issues. The paper will be presented for public comment at the Council's November 28-29 meeting in Portland, Oregon. The paper can be ordered through the form on the back cover of this issue.

Power amendments adopted by Council

Two amendments to the Northwest Power Plan were adopted by the Northwest Power Planning Council at its October 31 meeting in Butte, Montana. They affect the methodology for determining the surcharge to be levied if the Council's model conservation standards or their equivalent are not adopted by January 1, 1986, and the Bonneville Power Administration's Street and Area Lighting Program.

Under the first change, the surcharge would be calculated as 10 percent of the cost to the utility of the firm power purchased from Bonneville. If only a portion of a utility's service area has not adopted the standards or comparable measures, the surcharge amount will be multiplied by the noncomplying jurisdiction's share of the utility's total load. The methodology is in Appendix D of the power plan.

Under the previous methodology, Bonneville would do detailed calculations to determine the costs being imposed on the region by a jurisdiction that failed to adopt the standards or an alternative that achieved equivalent savings. The surcharge could range between the minimum of 10 percent and maximum of 50 percent set by Congress. The amendment simplifies the surcharge calculation and reduces some of the administrative workload.

Also in the power plan, Bonneville's Street and Area Lighting Program was to be terminated due to the current energy surplus. Unlike conservation measures for buildings, street and area lighting improvements have a short lifetime. They can contribute unneeded savings during the surplus, but will not last long enough to offset later deficits.

Bonneville requested continuation of the program at a low budget level through fiscal year 1988 on grounds the program encourages utilities to stock more efficient fixtures and use them for new accounts. Increased inventories of these fixtures should lead to conversions to more efficient lighting systems. At that point, Bonneville support could be terminated and the savings would still accrue.

The amendment calls for continuation of the program at a "minimum viable level."

Copies of both amendments are available upon request.

Washington's Collins elected new chairman

Charles Collins of Washington state has been named chairman of the Northwest Power Planning Council. He succeeds Keith Colbo of Montana. Robert Saxvik of Idaho was named vice chairman succeeding Roy Hemmingway of Oregon.

The unanimous election of the two by their fellow Council members comes at a key time for the Council. During the next year, the Council is redoing the Northwest Power Plan it adopted in 1983.

The new chairman will guide the Council through a re-examination of critical resource questions regarding electric power in the region. "During the next year," Collins explained, "The Council will be dealing with major issues such as WPPSS nuclear plants 1 and 3 and Northwest power sales to California. A major task will be rebuilding the regional institutions and framework for cooperation destroyed by litigation and rapid rate escalations. The price of cooperation has become very expensive, but it is not less important."

Collins is president of Colsper Corporation, a company involved in solid waste collection and disposal. His experience has been in both the private and public sectors. From 1976 to 1979 he served as director for Seattle Metro Transit. Prior to that he was chief administrator for King County.

Saxvik, who served as chief of staff for Idaho Governor John Evans, was a three-term state senator. Before joining the governor's staff, he was vice president and general manager of KBAR radio in Burley, Idaho.

Stanwood is second to adopt standards

The city of Stanwood, Washington has become the second city in the region to adopt the Northwest Power Planning Council's model conservation standards. Stanwood is a community of 1,500 people 50 miles north of Seattle.

"Protecting citizens from the rate increases which occur from the surcharge and providing those people building new homes an opportunity and financial assistance to upgrade those homes to energy efficient levels were the prime considerations of the city council in passing the standards," explained Don Glancy, city clerk treasurer.

Stanwood is currently negotiating with the Bonneville Power Administration for an assistance package.

Amicus brief filed in Salmon River case

The Northwest Power Planning Council has filed an "amicus curiae" brief in a federal court suit that could affect licensing of hydroelectric projects in the Columbia River Basin. The suit has been brought by the National Wildlife Federation, Idaho Wildlife Federation, and Nez Perce Tribe against the Federal Energy Regulatory Commission (FERC). It is pending before the U.S. Court of Appeals for the Ninth Circuit.

The case involves seven preliminary permits for hydroelectric projects which FERC issued in the Salmon River Basin. The parties to the suit contend the permits were issued without adequate consideration for the proposed development's impact on fish and wildlife. The suit charges FERC did not provide for a comprehensive development plan for the basin, failed to consolidate applications for simultaneous review, and did not require assessment of cumulative impacts of more than one project on the environment.

The Council's fish and wildlife program recognizes the importance of the cumulative impact assessment. Individually, small projects may have little effect on fish and wildlife. But several such projects taken together within a drainage basin may have considerable impact. In its brief, the Council asserts that FERC has failed to follow the requirements of the Northwest Power Act which stipulates fish and wildlife be given "equitable treatment" in power development and that the Council's program be taken into account to the "fullest extent practicable" in such development.

The Salmon River is considered the single largest producer of spring chinook salmon and steelhead in the Columbia River system. Currently about 50 applications for development in the area are pending.

Charles Collins, right, was elected chairman of the Northwest Power Planning Council, while Robert Saxvik, below, was elected vice chairman. (See story)

Ralph Perry photos

NORTHWEST *Shorts*

An environmental impact statement is required for the Bonneville Power Administration's long-term power contracts, according to a federal court ruling. Some 145 20-year contracts are affected as a result of the suit brought by Forelaws on Board, an environmental group. However, the court refused to grant an injunction to stop the contracts while the statement is being prepared.

It's believed to be a precedent-setting case. The Idaho Public Utilities Commission is holding hearings to determine if Washington Water Power and Idaho Power Company should "normalize" ratepayer accounts to balance rates between high and low water years. Currently, according to Idaho PUC information officer Dana Howard, ratepayers frequently bear the additional charges of a low water year without reciprocal benefits being passed on in high water years. (Source: Northwest Conservation Act Coalition Report.)

Cogeneration is the wave of the future, according to Frost & Sullivan, a market research firm. By the year 2000, national cogeneration should grow from 40,000 to 55,000 megawatts as increasing numbers of businesses begin generating their own power. (Source: Power Line.)

A major "public information" program has been launched by the Public Power Council to promote public support of low rates from the Bonneville Power Administration. Both private utilities and the direct service industries have fielded similar promotion campaigns in the past year. (Source: Northwest Conservation Act Coalition Report.)

A $2.7 million grant has been awarded to Tacoma by the Bonneville Power Administration to help the city implement the Northwest Power Planning Council's model conservation standards. Builders will receive $1.8 million of the amount to make up for increased costs of building to the standards. As the first city to adopt the standards, Tacoma is considered a testing ground for their administration.

More efficient use of electricity by industry is the goal of Bonneville's industrial test program. The agency has awarded five contracts in an attempt to get cost and engineering data on potential energy efficiency measures for the industrial sector. The contractors will analyze 25 companies selected for their high energy use.

October 2 was the day the lights went out — in nine states. A "disturbance" in Bonneville's 500,000 volt transmission line which runs from Oregon to California left nearly a million utility customers without electricity — some for as long as an hour.

Selling Bonneville "would simply not be feasible," Energy Secretary Donald Hodel told an audience in Portland, Oregon recently. The suggestion to sell federal power marketing agencies was part of the Grace Commission Report on ways to cut government costs. Such an action could double or triple rates, Hodel said. (Source: The Oregonian.)

About 1.2 million homes will be eligible for Bonneville's home weatherization program thanks to a program expansion as of October 1. Previously, only 327,000 homes were eligible for conservation measures that include storm windows, wall insulation, caulking, and weatherstripping.

Utilities must shift their focus from the supply side to the demand side, according to a study by the American Public Power Association. The study says canceling generating units under construction may be more economical than completing them. It goes on to say utilities can no longer hide from environmental issues and consumers must no longer be taken for granted. All future planning, the report adds, must involve consumer and local government representatives. (Source: Public Power.)

Rumors of a Northwest office for the Federal Energy Regulatory Commission have cropped up. Most likely site would be Portland, Oregon. The speculation was fueled during Congressional hearings on FERC. Representatives of the Northwest Power Planning Council also appeared at the hearings to urge a closer working relationship between the Council and FERC in order to better implement the Council's fish and wildlife program.

Bonneville's long-term intertie policy draft will be delayed, the agency reports. Previously scheduled for December, the draft is expected in late winter or early spring. Meanwhile, the near-term policy is being reopened for public comment. At the same time, Bonneville is preparing an environmental impact statement on the long-term policy. Public comment closes November 30.

Artifacts from a railroad labor camp used by Chinese immigrants in the 1880s have been discovered at the site of a proposed kokanee fish hatchery for Idaho's Lake Pend Oreille. The site, east of the Clark River, is owned by Washington Water Power Company which is building the hatchery along with Bonneville and the Idaho Department of Fish and Game. The Northwest Power Planning Council approved construction of the hatchery, which is expected to produce 750,000 more adult salmon in three to five years, earlier this year.

Oregon Historical Society photo (Negative #50082)

Making the Journey safer

Fish and wildlife amendments

As is often the case, it is the excerpt that gets most of the attention, and not the book. And so it was with the amendments to the Columbia River Basin Fish and Wildlife Program.

On the final day of the amendment process, the Council's program received more publicity than it had in the preceding year. Throughout the region, the media reported the Council's decision to close the second powerhouse at Bonneville Dam unless an 85 percent fish bypass efficiency can be reached. The irony about all this attention was that this was but one change among dozens of new or altered program measures.

On the other hand, the second powerhouse decision was symbolic of the overall amended program in two important ways. First, it underscores the Council's top priority – to improve mainstem passage for downstream migrant fish. Second, it sent a clear signal to the region that this is an action-oriented program, one based on fixing the problems, not just researching them.

by Ruth Curtis

This past October, after 11 months of work, the Northwest Power Planning Council adopted amendments to its Columbia River Basin Fish and Wildlife Program.

This first-ever amendment process began last November when the Council called for amendment proposals. Over 140 were received from 28 individuals and organizations. In addition, the Council staff itself initiated several amendments.

In June, a draft amendment document was produced which recommended adopting or rejecting the various proposals. A public comment period was announced and hearings were held throughout the region on this draft document. Over a hundred groups and individuals commented on the amendments.

After studying the amendments and more than 700 pages of comments, the Council approved about half the proposed amendments, modified a number of the proposals, and incorporated a variety of changes that were suggested by its staff. "The process was time consuming but resulted in major improvements to the Program," stated Ed Sheets, the Council's executive director.

Major amendments are discussed below. ▶

Action plan

An action plan has been added as a new program section to set priorities and schedule the implementation of the program over the next five years.

The plan emphasizes two key interim objectives — increasing the production of salmon and steelhead and protecting the ratepayers' investment. This is done by focusing on improving fish passage on the mainstem of the Columbia River, providing adequate water flows, and increasing the upriver production of salmon and steelhead. The ratepayers' investment is protected through setting goals, promoting adequate harvest controls, and requiring work plans, regular reporting and evaluations of implementation work being done.

Although salmon and steelhead are stressed in the action plan, wildlife and resident fish protection are also included, especially in Montana where there are no anadromous fish.

Mainstem passage

Mainstem passage problems are pointedly addressed in the amendments. As juvenile fish head downstream to the ocean, they must pass through nine (eight if they begin on the Snake River) dams on the mainstem of the Columbia River. If the fish cannot survive passing the dams, all other measures to help them, such as habitat improvements and hatchery breeding, are useless.

At each dam, the juvenile fish face turbines which kill many and stun and disorient others, making them easy prey for predators. The mortality rate for fish passing through turbines is approximately 15 percent.

Measures such as the installation of mechanical bypass systems and interim spill programs can increase the number of survivors. The efficiency of these measures varies at each dam, and some dams have no bypass system at all. McNary Dam's system can deflect 85 percent of the fish from the turbines and is considered a state-of-the-art mechanical system.

An amendment to the program calls for the Corps of Engineers to begin work immediately to completely solve the juvenile fish passage problems at Bonneville Dam's second powerhouse. Currently only about 21 percent of the young fish are being diverted from the turbines. Until a solution is found, the Council is asking the Corps to deflect 85 percent of the fish from the turbines by operating only the first powerhouse and spilling excess water when the fish are migrating down the river. (There are three exceptions to the closure of the second powerhouse; (1) for fish passage requirements, (2) for testing of the bypass system, and (3) to generate firm power when it is needed and cannot be produced elsewhere in the region.) According to Jim Ruff, Council hydrologist, this interim measure should cut juvenile fish losses in half at Bonneville Dam.

Other amendments dealing with The Dalles, Lower Monumental, and Ice Harbor dams, require the Corps to develop temporary juvenile fish passage plans that will allow at least 90 percent of the fish to survive passing each dam. In addition, the Corps is to install bypass systems to deflect 90 percent of the young fish from the turbines at each dam within the next five years.

New facilities

The Council has authorized construction of a hatchery on the Yakima Indian Reservation and temporary John Day acclimation ponds.

The original program required adequate controls on ocean and river harvests before construction of the Yakima hatchery could begin. After analyzing the current status of ocean and river fisheries, the Council decided construction can proceed, on the condition that the fish stocks produced do not contribute to uncontrolled fisheries, primarily those off Alaska and Canada.

The acclimation ponds allow short-term holding of juvenile fish to relieve stress suffered in transportation from the hatchery to a release site and to ensure that the fish have learned to identify the chemistry of the river's water, to which they will return as adults. If the temporary ponds show this type of facility improves survival, the Council will consider approving the construction of permanent facilities.

Another amendment provides for Bonneville funding of a trout hatchery on the Colville Indian Reservation. The construction of the Chief Joseph Dam and Grand Coulee Dam ended the salmon and steelhead runs in this area in Washington. The hatchery will partially lessen that loss.

New research

The Bonneville Power Administration has been called on by an amendment to fund a share of the costs of an electrophoresis demonstration program. Electrophoresis is a technique which has potential for fine-tuning ocean harvest during the fishing season. It will allow harvest management agencies to adjust their regulations to protect weak fish stocks.

Habitat improvement/ passage restoration

About 27 new sets of habitat improvement and passage restoration projects are added for Bonneville funding as offsite enhancement. They are designed to compensate for the effects of hydroelectric projects on fish and wildlife away from the actual site of the project. Included in the amendments are projects in the Clearwater and Salmon basins in Idaho, the Wenatchee Basin in Washington, and the Hood, Sandy, Clackamas, Grande Ronde, and John Day drainages in Oregon, among others. ■

Interview:

Randy Hardy

by Carlotta Collette

Editorial writers have applauded the Seattle City Council's choice of Randall W. (Randy) Hardy, former executive director of the Pacific Northwest Utilities Conference Committee (PNUCC), as the new superintendent of that city's municipal electric utility, Seattle City Light. But editorialists have also recommended that Hardy had best bring along "asbestos shorts" for his transition to the "hot seat" at City Light, where he becomes the third mayoral appointee to that position in seven years.

In Hardy, Seattle's City Council and mayor have picked a man who is familiar with both the region's energy issues (having worked with the Bonneville Power Administration before PNUCC) and with building stable organizations in the midst of unsettling circumstances.

Hardy's two-and-a-half years as executive director of PNUCC saw that institution move from a primarily technical orientation to a central position at the table where regional energy policy was in the making.

"PNUCC was needing some direction," Hardy explained in reference to his tenure there. "It started out as a lobbying organization back in the late forties to lobby for Corps and Bonneville appropriations. It was nothing more than a collection of utilities with a law firm providing legal counsel.

Carlotta Collette photos

"By the mid-seventies it had developed a small staff and was doing load forecasting. With the creation of the Northwest Power Planning Council there was an almost overnight need for some sort of policy organization to be the spokesman for the region's utilities and industries. That was my charge at PNUCC: to form some sort of consensus position among the utilities on these various issues — responsible policy positions that not only represent the region's utilities, but are also responsive to the kinds of legislative demands that are placed on the Power Council.

"A large part of the Council's plan relies on the region's utilities for implementation. We needed some sort of mutual agreement between the planning body, the Council, and the implementing bodies, Bonneville Power and the utilities. That was the role PNUCC played over the last two or three years. I think we've been fairly successful at that."

There is a lot of talk in energy circles these days about the region, in essence, falling apart . . . of the major participants going their separate ways. From your view at PNUCC which represents the industries and the utilities can you comment on that concern?

I can understand why some people might be concerned about that, but I think it's a short-term phenomenon. I think the long-term outlook is really pretty good.

I see people being risk avoiders in the long term, even the investor owned utilities (IOUs). I see people purchasing from Bonneville in the 1990s, when they have to start purchasing again, simply because it'll be a lower risk alternative than trying to build their own resources, or entering into a variety of cooperative intertie arrangements which will tie these utilities to Bonneville. I see a lot more cooperative things and a lot more ability (by virtue of that kind of cooperation) of the Power Council's plan to influence what the utilities ultimately will do. They can kind of set, if not the precise path, at least the general direction that we'll follow.

Look at what the Council's done already! Who had ever heard of "options" before, or "forecasting ranges" . . . the whole "planning for uncertainty" concept. If there is a single accomplishment the Council has had it is that they have gotten people to recognize that there really is uncertainty out there. The trick is how to deal with that uncertainty in a responsible way. We still don't know whether the options concept is going to work or not, but at least we're examining that and other kinds of alternatives.

We've done range forecasting. The utilities and Bonneville are doing that. We're building lots of capability in the conservation areas. We're doing lots of things that we probably wouldn't have done without the Power Council being there.

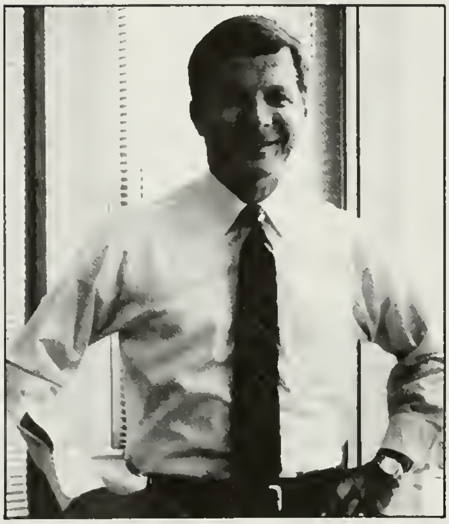
There's the whole fish program . . . it's going like a house-a-fire. It's not going as fast as some of the Council would like it to, but there's no question which direction it's going. We're going to spend lots of money for fish. Whether there'll be a return or not we can debate about. That's fair. That's a debate as it should be. For the first time, you have a real debate in the region, and you've got the Council as a kind of arbiter of the various interests — the utilities, Bonneville, the Conservation Act Coalition and others — in charting a direction based on that input. That's a positive thing.

The Council's Plan, by merit of its own internal logic and its ability to influence Bonneville directly in terms of programs, is the only tool the Council needs, and the only tool that Congress intended it to have. To the extent that it tries to exert other authorities to become the region's central implementer rather than just the planner, the Council will acquire all that excess baggage that Bonneville has typically had to carry over the years, and engender the same kind of suspicion and hositility from the utilities.

That would be unfortunate. I don't think the Council has to do that in order to achieve 90 percent of what it wants to achieve. Then we can fight about the other 10 percent. The Council, just by virtue of its political clout, can be very effective in exerting its will on the individual issues in that other 10 percent.

It's got to do that by the power of its own reasoning and by the persuasiveness of its own arguments. It can't just say, "This is the way it is." That would end up having just the adverse result we've talked about, that is, everyone pulling away from the coordinated system planning, rather than moving closer to it. It depends very much on the approach the Council uses.

> "If there is a single accomplishment the Council has had it is that they have gotten people to recognize that there really is uncertainty out there."



"The region can only succeed to the degree that it forms cooperative arrangements among all the players."

Can you spell out some of the issues you think the Council should be looking at now, particularly in light of the coming revision of the power plan?

I think the whole question of model conservation standards and the surcharge is obviously a big issue. The Council is to be commended for taking a very aggressive approach on that. Hopefully, the end result of all this will be that we have a much stronger building code regionwide than we have now. They may not be codes quite to the level the Council now has, but, ultimately, if we can get 90 percent of the way there, and get the states to that point, I think we will have won the battle. I think we'll be in pretty good shape.

The whole question as to whether "options" is a valid planning concept is another issue. They're proceeding ahead with an options paper that pretty much assumes that options are going to work. That's a pretty heroic assumption. The Council will reach a point in this next planning process where they're going to have to honestly face whether they want to rely on options to the extent they relied on them in the last plan. They may want to have options as one of several strategies that they can use to meet the load growth.

I guess the other issue that I would see would be the whole question of system reliability. What kind of reliability standards do you use? Do you move off of critical water planning? Do you use combustion turbines? This is a very sophisticated regional planning question, and I think the Council understands that. I hope they resist the temptation to say, "Well critical water planning is something that happens only once in a hundred years and is a ridiculously conservative standard."

That's not to say that we shouldn't do something besides critical water planning, but there are a lot of serious trade-offs here. Critical water, or low, almost to critical water, happens about once in every five years in this region. Those are Russian roulette odds, and for planning the reliability of your power system, those may not be the best kind of odds to plan with.

The Council cannot mandate this thing and, if it tries to mandate it, it will do nothing more than polarize the region. But to the degree that it can lay out a course that, because of the wisdom of the planning that the Council does, is so compelling that the utilities, Bonneville and the Corps and others will say, "Yes, that's what we should have been doing all along," or "there are changed circumstances and this is now the way we should go . . ." To the degree the Council can do that, it can be the energy leader in the region that I think the Congress envisioned.

What about WPPSS 1 and 3, and the California sales of firm surplus power, how do you see these factors affecting the power plan and the region?

I've been widely quoted in the papers saying that WPPSS 1 and 3 are dead. I don't think it's a sure thing, but I don't see the legal tangles being untied even by '87, so I'm pessimistic about them. I don't think we should jettison the things right now, but the Council should be looking at other ways to fill those holes.

We could see the surplus go quite quickly, or we could see it grow. It's all just a part of the uncertainty. If anything, the forecasts are all still too high: ours, the Council's and Bonneville's. It might be that we could lose 1 and 3, and there might not be any particular consequence to that. It's grossly premature to say at this point.

We've been monitoring load growth and we've watched it go down over the past eight months. The question is, is this a long-term trend or is this just something that's going on now.

What this is telling us is that there is a lot of actual permanent conservation, and/or curtailment, and/or fuel switching going on. It can only be one of those three. What it tells me is that there is a lot of permanent structural change going on. If this is a long-term trend, if the growth rate is maybe one percent or 1.2 percent instead of 1.6 percent, then WPPSS 1 and 3 disappearing might not be all that important, and a California surplus sale might acquire significance.

Continued next page

Interview: Randy Hardy

What effect do you think WPPSS will have on public power in general?

Well there have been some serious challenges to public power besides WPPSS. There have been a couple of very concerted attacks on the preference clause which is the basic piece of legislation enshrined in several statutes that gives public power preferential access to low cost federal hydropower. There will continue to be attacks like that, because people will associate public power with things like WPPSS. The credibility that public power once had has suffered because of that.

I would hope that Seattle will exert some influence in the region to show that things like WPPSS are just exceptions to an otherwise good record, very glaring exceptions, but just that, exceptions, and not new norms by which to measure public power's viability as an institution. I hope Seattle can help to demonstrate the kind of responsible regional energy leadership that will show that public power is worthy of the preference clause and the other attributes that have traditionally gone with it.

How do you see Seattle doing that . . . what are your goals for City Light?

I'd like to see City Light continue to be a leader in public power and in regional energy matters as well. Before that is possible, however, we need to cure some of the internal problems that we have within the utility. We need to bring some administrative stability, some management and personnel stability, and with that, some relative rate stability, or at least predictability. Those two things have to be precursors to our launching out into the regional arena in a more aggressive way. We'll continue to be quite active, probably more active, but I'm going to have to devote most of my time to these internal matters.

I think the city may very well adopt the model conservation standards. That's under very active consideration right now in the city. Things seem to be moving in that direction.

I think the utility will continue to be a leader in that area, but for us to continue to deal effectively in that area we have to reach some agreement with Bonneville over funding of conservation programs. There are avoided costs, at least in the short term, with Bonneville's wholesale rate. There's not much we can do on our own. The whole debate over the conservation contracts was unfortunate, but now we have to heal that wound. There's an obligation on us and an obligation on Bonneville as well. I'm optimistic that we can agree, and when we can do that, I think we'll see a lot of progress in the conservation area.

The Public Power Council has put in a lot of work to try to fashion a solution that's acceptable to all the public utilities. Out of that, as well as the input from the IOU's, will come a solution, within a year or so, to resolve this issue. This is just a natural cathartic process that we had to go through. The economic circumstances at Bonneville are better than they were a year ago. They are for the utilities as well. I'm optimistic that we'll get the regional conservation bandwagon back on the road.

We're all in this for the long haul. We're in the business of building institutions; as Chuck Collins is fond of saying, institutions aren't built overnight.

The Council had a remarkable accomplishment in getting its first plan out in that short a time with the quality that the plan exhibited. That quality will continue to improve.

There will be minor detours along the way, but the region can only succeed to the degree that it forms cooperative arrangements among all the players. That's what the coordination agreement is all about. That's what the whole coordinated system operations are all about. I hope that's what the Council's power planning process will turn into. If the Council can evolve that kind of relationship with the region's utilities, a true planning relationship rather than a regulating relationship, then I think it will succeed well beyond even its expectations.

That's the challenge the Council has, and the challenge that the utilities and Bonneville have as well. The onus is equally on all three of those bodies to see that we move in that direction and not get too upset about the short-term twists and turns. ■

It begins!

A new power plan

It made history less than three years ago, when the Pacific Northwest became the first region in the country to study, plan for and embark on a program to meet its energy needs for the next 20 years through a cooperative public process. Big decisions came before the citizens of the Northwest. In open hearings throughout the region's four states of Idaho, Montana, Oregon and Washington, ratepayers testified beside utility board members and industry chiefs. It took two years for the Northwest Power Planning Council to set up shop, develop that first plan and see it through to adoption.

by Carlotta Collette

When the Pacific Northwest Conservation and Electric Power Plan (now known as the Northwest Power Plan) came out, one of the critical factors it acknowledged was the certainty of uncertainty. Respecting that new consciousness, the Council decided to regularly review its own assumptions and directions. The plan itself called for a revision in two years.

The new version will incorporate lessons learned from the demonstration projects and training programs that were a part of the two-year action plan component of the first plan. The new plan will benefit from two years' experience with a new planning mode and with the uncertainties inherent in anything as big as a regionwide, interstate 20-year plan. The new plan is an opportunity to move the process of regionwide energy planning forward. The region is just beginning to take up the challenge of developing the new plan, a process that will culminate in December 1985.

Load forecasting

When that first plan was being considered, the region was leaving behind worries over energy shortages (one of the major concerns that led to the regional act in the first place) and developing ways to cope instead with an unexpected firm power surplus. Current economic and load conditions are now monitored by the Council on a semi-annual basis as a way of tracking the factors that affect long-range forecasts. This regular analysis will be folded into a new load forecast and analysis of the region's economic growth potential over the next 20 years.

A draft plan will be published in July 1985. Prior to that time, several issue papers will be released to provide background and focus for the decisions affecting electric load forecasting. Most of these will be available in December 1984. They include reviews of the effects of electricity prices on the economy, the levels of production that can be expected from major energy-intensive industries and descriptions of the demographic and economic assumptions the Council will use in its forecasts.

An issue paper that explores the many financial variables that must be considered and the range of opinions regarding the relative values of choosing one set of assumptions over another will be made available to the public early in 1985. In the analysis of resource cost effectiveness, "discount rates" must be used to convert various costs over time into "present value." This paper will lay the groundwork for the financial assumptions that will be used in the preparation of the new power plan.

In early spring, four issue papers will be released that deal with the actual demand forecasts for each of the major energy use sectors: residential, commercial, industrial and agricultural. These papers will provide a more detailed understanding of patterns of electricity use anticipated in the next 20 years.

Resource assessments

Beginning in January 1985, the Council will publish a series of issue papers that attempt to quantify the various renewable and nonrenewable electric energy resources available or already in use in this region. Each paper will look at the feasibility, costs and environmental impacts of using a given resource, whether coal, biomass, hydropower, liquid and gaseous fuels, solar, wind or geothermal.

In addition, the Council will reassess the cost effectiveness of the Washington Public Power Supply System's nuclear-fueled plants 1 and 3. Based on its findings, the Council will determine whether or not these plants should be retained in the power plan's resource portfolio.

The Council will also present environmental criteria designed to protect the region from damage that could result from development of new energy resources.

At least two other resource acquisition questions will be considered and reviewed during the coming planning process. If needed, electricity could be imported from outside the region. An issue paper will address this possibility and cover costs and constraints guiding such acquisitions. Additional energy can also be conserved by improving the efficiency of existing power generating projects. The Council will publish an issue paper analyzing this potential resource in addition to all the others.

Conservation assessment

Perhaps the most innovative aspect of the original power plan was its treatment of conserved electricity as an additional resource in its own right. The Council designed a package of model conservation building standards for new electrically heated residential construction and all new commercial build-

▶ *Continued on Page 16*

Public involveme

The Northwest Power Planning Council is beginning development of its new power plan. A draft plan will be released in July 1985. The final plan will be adopted in December 1985. Decisions made during this period will have a major impact on the Northwest. The Council wants to ensure that citizens of the region have access to information about these decisions – as well as fish and wildlife decisions – and ample opportunity for involvement in the revision process or any other process such as the Council's goals study.

What do you feel are the major strengths of the Council's public information and/or public involvement programs?

What do you feel are the major weaknesses?

The following issues have been identified as subjects that should be addressed during development of the plan. Please rank them according to your interest in the issues: #1 an issue you are very interested in; #2 you are moderately interested; and #3 you have little interest.

- ___ Economic growth and load forecasts
- ___ Future of direct service industries (aluminum)
- ___ Conservation resource assessments:
  - ___ residential
  - ___ commercial
  - ___ industrial
  - ___ agricultural
  - ___ system efficiency
- ___ Generating resource assessments:
  - ___ hydro power
  - ___ WPPSS 1 and 3
  - ___ coal
  - ___ cogeneration
  - ___ other renewables
- ___ Out of region:
  - ___ power sales
  - ___ power imports
- ___ Critical water planning

What other issues do you feel the Council should be addressing?

nt questionnaire

You can help us serve you better through more effective public information and involvement programs. Please take a few minutes to fill out this form and mail it to Dulcy Mahar, Director of Public Information and Involvement, Northwest Power Planning Council, 850 S.W. Broadway, Suite 1100, Portland, Oregon 97205. (Please feel free to attach comments if you do not have adequate room here.)

Optional:
Your name: ____________
Organization: ____________

Where do you get most of your information about the Council and its activities? If more than one, rank in order of importance with #1 the most important.

__ Council meetings
__ Council special mailings
__ Formal consultations
__ Informal staff conversations
__ Issue papers
__ Hearings
__ Newspapers, radio, TV
__ *Northwest Energy News*
__ Other organizations' newsletters (specify) ____________
__ Other (specify) ____________

Does the Council's information system keep you:

__ Generally well informed
__ Moderately informed
__ Poorly informed

Do you have any suggestions for how the Council could improve its information system?

____

Do you feel you have a reasonable opportunity to participate in Council decision-making?

____

Do you have any suggestions for how the Council could improve its public involvement system?

____

What kinds of information (or issues) are you most interested in getting from the Council?

____

Power Plan continued .

ings that, if adopted regionwide, could provide substantial savings of electricity. During the coming plan development, the assumptions and expectations upon which these standards were based will be carefully reviewed.

The new plan will also provide the region the opportunity to re-examine conservation in the industrial, commercial and agricultural sectors. Demonstration projects that have trained builders, farmers and utility personnel in methods for conserving energy will be evaluated, as will Bonneville's progress and experience in implementing the action plan.

Electrical system analysis

Lest it appear that the Council is only studying the trees without looking at the whole forest, several large institutional, systemwide issues will also be explored during the coming year. One of these is what is often called the "big region/little region" question. Due primarily to the rapid drop in load growth just after the signing of the Northwest Power Act, the institutional relationships expected by the authors of the Act have never fully materialized.

For example, most of the region's major utilities failed to sign long-term conservation contracts with the Bonneville Power Administration. Such actions limit the effectiveness of regional planning overall. This concern will be discussed in an issue paper which should be available next spring.

Other topics such as the reliability of the hydro system and critical water as a planning base, the promise of California sales of firm surplus power and the upgrading of the intertie over which that power is moved, and the usefulness of combustion turbines as supplements to the hydrosystem will also be covered in issue papers and discussions before the Council.

Out of all of this will come a reconsidered resource portfolio for the region based on the cost effectiveness of each potential resource. Most importantly, it will produce a strategy for managing uncertainty and risk in the region's future.

Public involvement

A major purpose of the Northwest Power Act was to place decision-making for the region's energy future into an openly accountable public body. The Act specifically directs the Council to "insure widespread public involvement in the formulation of regional power policies."

In its opening statement, the Act lists public participation and consultation as one of its major purposes along with promoting conservation and efficient use of electrical power, development of renewable resources, and assuring the region an adequate and reliable power supply. In response to that mandate, the Council has always operated in the public forum. This policy will continue during the coming development of the next power plan.

All above-mentioned issue papers and any additional ones which are developed will be made available to the public. The back cover of each issue of *Northwest Energy News* will carry a list of publications currently available along with an order form. The sequence of events will allow several opportunities for public comment.

First, an issue paper will be presented at a Council meeting, which like all such meetings is open to the public. Public comment will be scheduled at the following meeting three weeks later. A preliminary decision will be made at the meeting following that second meeting. Anyone wishing to comment on the issues being discussed who cannot attend a meeting may submit written comments during scheduled periods.

Since Council meetings are regularly three weeks apart, the Council will have six weeks in which to receive, review, and consider public testimony before even a preliminary decision. By June of 1985, the Council will have heard comment on all the issues and will publish a draft plan. Another public comment period on the draft will be scheduled and will include public hearings in each of the four Northwest states. The hearings are in addition to regular Council meetings.

Throughout the process, the Council will consider both oral and written comment and will consult with those groups and individuals involved in regional energy issues. After all comment is considered, the Council will adopt the final plan in December of 1985.

The Council is currently updating its mailing lists and refining its public involvement process. Please take the time to fill out the questionnaire on the preceding pages.

The Northwest Power Planning Council wants to ensure that citizens of the region have ample opportunity for involvement in Council programs. Please take a few minutes to fill out the questionnaire on the preceding page and mail it to:

Dulcy Mahar
Director of Public Information and Involvement
Northwest Power Planning Council
850 S.W. Broadway, Suite 1100
Portland, Oregon 97205

New advisory committees will guide new power plan

by Ruth Curtis

The Council has formed three new advisory committees to assist with developing the new Northwest Power Plan. These committees serve two purposes. They allow the Council to take advantage of the expertise within the region, and they enable the parties directly concerned to have more impact on the new plan. Committee meetings are open to anyone who would like to attend and time is provided for public comment. Contact the Council's central office to find out when and where meetings are being held.

State Agency Advisory Committee

As the Council develops the power plan, it looks at the Northwest as a whole in order to minimize energy costs for the entire region. But individual states often have different perspectives and concerns on some issues. If the plan is to be effective, these views must be integrated with the Council's. The State Agency Advisory Committee was formed to provide this integration and to increase communication between the Council and the state agencies. The committee helps identify issues that should be considered in developing the plan and shares information on each state's activities related to the planning process.

State agencies represented on this committee include: Washington Utilities and Transportation Commission; Oregon Public Utility Commission; Idaho Public Utilities Commission; and Montana Public Services Commission.

Demand Forecasting Committee

At the foundation of the power plan is the forecast of electricity demand for the next 20 years. To be sure the best possible models, assumptions and data are used to develop this forecast, a Demand Forecasting Advisory Committee has been formed. Through it, knowledgeable people in the region assist in this part of the Council's work.

Members of this committee include: Steve Aos, Washington State Energy Office; Kenton Corum, Northwest Power Planning Council; John Duffield, University of Montana; Scot Hannigan, Pacific Power and Light Company; David Hoff, Puget Sound Power and Light Company; Don Hoffard, Bonneville Power Administration; Boyd Jack, Tektronix Corporation; Mike Mace, Idaho Power Company; Gordon McDonald, Pacific Northwest Utilities Conference Committee; Terry Morlan, Northwest Power Planning Council; Don Reading, Idaho Public Utilities Commission; John Savage, Oregon Department of Energy; Ed Whitelaw, ECO Northwest, Ltd.; Lincoln Wolverton, Public Power Council; and Robert Young, Direct Service Industries, Inc.

Economic Forecasting Committee

The most important determinant of the Northwest's future electric demand is the growth of the region's economy. The economic forecast in the Power Plan will consist of a range of possible economic futures. It will be developed with the assistance and guidance of the many regional experts who make up the Economic Forecasting Committee.

The following people are members of this committee: Charles Allcock, Portland General Electric; Byron Ansel, Washington Department of Revenue; William Beyers; Charles Broches; Phillip Brooks, Montana Department of Commerce; Phil Carver, Oregon Department of Energy; Susan Doolittle, Port of Seattle; Mike Ferguson, Idaho Division of Financial Management; Debbie Kitchin, Northwest Power Planning Council; Eugene Lewis, Montana Power Company; Gordon McDonald, Pacific Northwest Utility Conference Committee; Lynn Michaelis, Weyerhaeuser Company; John Mitchell, U.S. Bancorp; Geoff Moorman, Bonneville Power Administration; Terry Morlan, Northwest Power Planning Council; Bill Nicholson, Potlatch Corporation; Ron Oliveira, Oregon Executive Department; Lincoln Wolverton, Public Power Council; and Robert Young, Direct Service Industries, Inc.

Other Advisory Committees

The Council's other advisory committees include: Hydropower Assessment Steering Committee, Options Steering Committee, Hydropower Options Task Force, Coal Options Task Force, Cogeneration Options Task Force, Options Evaluation Task Force, Industrial Conservation Advisory Committee.

See the March/April 1984 issue of *Northwest Energy News* for information on these committees.

Energy Efficient Irrigation:

hope for Northwest farmers

by Carlotta Collette

The sign on the highway says that there'll be "blowing dust" for the next 40 miles, and in recent years there have been complaints of sand dunes crossing onto the interstate near Umatilla in Eastern Oregon. It seems an unlikely place to set up farming operations. But just past the sign, at the Boardman exit, there's a green field, and down the frontage road there's a new orchard and vineyard. It's like the age-old fantasy of gardens in the desert, and it is almost entirely due to the technologies of irrigation.

Frank Lamb's family farm corporation, a 12,000 acre spread that he manages for his relatives, borders the frontage road at the Boardman exit. Pretty much everything in view on his side of the road is part of his Eastern Oregon Farming Company.

It's a business venture that took close to $10 million to start and runs almost another million each year just in electricity. But, without the power to run the pumps to draw water from the Columbia River a few miles to the north, Frank Lamb's family farm wouldn't last long. A day without the pumps could cause enough damage to send a potato crop off to be shredded for french fries instead of sold over the counter for a premium price. When you produce an average of 240 million potatoes each year, or about 60,000 tons, you lose sleep over the water that makes it all viable.

"The soil here only holds about three-fourths of an inch of water," Lamb explains, shaking a fistful of the stuff onto the road. "Most soils hold four-to-five inches. Without irrigation water, the land was incapable of supporting any form of farming and was marginal grazing for only a few months each year."

Calling the growing medium at Lamb's farm "soil" is an overstatement. There is no humus in it at all. It is sand, pure and simple. Lamb's family farm is in a desert, a desert supplied with fertilizers and water, and founded with the understanding that electricity in the Northwest was an inexpensive given.

Then came the Washington Public Power Supply System (WPPSS) debts and rate hikes which threatened to price electricity out of the reach of farmers like Lamb and his family. "We were looking at WPPSS 4 and 5 debts that would have brought our electricity costs up to $180 per acre each year. When we started the farm we were paying only $25 an acre a year." Eastern Oregon Farming Company was facing a power bill in 1983 that would have been greater than any profit they had made in the 12 years they'd been farming.

Farm costs had climbed, while the prices paid to farmers for their produce stayed at record low levels. Profits, which are often marginal on farming operations anyway, dried up like the fields themselves. Some farmers around the Eastern Oregon Farming Company switched back to dry land farming where they could. Others gave up and left the land.

Lamb argued before the World Affairs Business Forum in 1983 that farmers were not alone in having to face the rate increase catastrophe. "The processing industry which depends on irrigated agriculture would find shortages of raw products forcing them to curtail production. Farm and processing jobs would be lost and the rural communities would slip further into recession as the multiplier effect spread the impact. To top it off," Lamb added, "significant reductions in electricity consumption would force the utilities to further increase their rates to cover their fixed costs."

The impact on regional utilities is a significant one according to Steve Levy at the Bonneville Power Administration. "Although irrigation sales [of electricity] for the region as a whole are less than three percent of the total sales, for many individual utilities irrigation accounts provide the major load, ranging up to 80 percent." Tom Waggonhoffer, another Bonneville employee in charge of irrigation programs, noted that loads at some utilities serving irrigators were down by as much as 50 percent, due in large part to the loss of irrigating farmers.

In 1979 and 1980 Bonneville began to tackle the farm related energy problem. From the early days of the Bonneville system irrigation had been encouraged by the power administration. Irrigation offered a natural off-peak load when the river supplied the most water and the region had the least use for it. During the winter when the region's need expanded, the farms were dormant.

The Northwest Power Planning Council gave impetus to the idea of energy conser-

Frank Lamb

Photos by Carlotta Collette

vation in irrigation when it published its power plan in 1983. The plan called for water application scheduling improvements and more efficient water application systems to reduce consumption and for financing programs to help purchase new more efficient watering systems. The Council found that development of conservation in irrigation could cut the anticipated demand for agricultural energy by as much as 30 percent in the next 20 years.

In its two-year action plan, the Council called upon Bonneville to develop a regional agricultural conservation program, provide technical assistance and training for irrigators, and initiate demonstration projects. The plan projected a savings of 35 megawatts within the next five years through these actions.

With the cooperation of irrigating utilities, Bonneville sponsored a pump testing program to determine pump efficiencies and offer suggestions to farmers on ways they could cut their energy use and, consequently, their losses. These tests indicated that most of the pumps measured were operating well below achievable efficiencies. "Some of these were so low," noted Levy, "that the pumps were using two-to-three times as much energy as required for an efficient pump."

Focusing on both mechanical improvements and scheduling changes aided by computers and communication satellites, the irrigators, the utilities and Bonneville have begun to bring the costs of pumping water onto arid fields down.

They have in most cases found that converting from high-pressure to low-pressure sprinklers, modifying the pumping plants to compensate for the reduced pressure, sealing leaks in the system, and using larger pipes with fewer angles in them to decrease the friction of the water and increase the flow, have been the most effective measures taken with existing equipment.

At Frank Lamb's farm, energy consumption per acre inch of water delivered went from 98 kilowatt hours in 1981 to 72 kilowatt hours per acre inch in 1983 when their farm equipment and watering patterns were changed. "The state-of-the-art irrigation system installed at Eastern Oregon Farming Company should be able to deliver one acre inch of water with 50.62 kilowatts per hour," Lamb reasoned after a lengthy calculation. That's about half of the electricity required in 1981.

After the equipment itself is tightened up, a whole package of technological devices are brought into play to help schedule watering only when it is needed. The new system relies on automatic, solar-powered weather stations set up in fields like those at Frank Lamb's. The weather station reads wind, temperature (both air and soil) and sunlight data, feeds these to an on-site computer which in turn relays the information via satellite to a station in Boise, Idaho. From Boise it is transferred through a computer back to the electric utilities where it is translated into an irrigation schedule for each field and crop.

Participating farmers can call up this information on their home computers. It will help them decide when to water, and how much water is needed at that time. Such accuracy can save farmers thousands of dollars in excess electricity each year.

Bonneville's Waggonhoffer feels that programs like these are important to the region as much as to the farmers themselves. "Our ultimate goal," he argues, "is to come up with an electric rate for irrigators. We recognize the importance of farming and feel an obligation to keep it a viable industry. The multiplier effect of agriculture is four to one, much higher than, say, aluminum companies."

In the interest of finding a way to supply irrigating farmers with a reduced rate, at a time when surplus electricity would otherwise be sold at bargain prices to California, Bonneville followed a recommendation of the Battelle Pacific Northwest Laboratories. Battelle determined that over 500 average megawatts of secondary (non-firm) power would be available during the period May 1 to July 31 about 80 percent of the time. This coincides with the spring "fish flush," when water is passed through the dams to aid the migration of salmon and steelhead smolts down the river.

Battelle suggested that Bonneville could offer this excess power to irrigating utilities at special rates. The power would come when the irrigating farmers most need it, during the spring planting season. In its first year Bonneville's program met with mixed success. "Non-firm" power is by definition interruptible. "Farmers can't plan on that kind of uncertainty," Waggonhoffer explained. "The use of non-firm power for them has limited application. As an interim it's an offer of lower cost power to keep farmers in business and re-establish farm-related loads on the rural utilities."

"The program was too difficult for most farmers to figure out or qualify for," counters Lamb, and that argument seems to run through much of the criticism of Bonneville's efforts.

"Many utility personnel and irrigators have become frustrated because of the growing complexity and ongoing uncertainty . . . new requirements are being placed on participating utilities every month." That's the evaluation of Aaron Jones, coordinator of Northwest Irrigating Utilities (NIU). NIU represents 18 public utilities that are preference customers of Bonneville and distribute power to nearly half the irrigators in the region.

"What we have right now is a complex program that few people really understand and almost no one can feel comfortable with," continues Jones. "Unless a real effort is undertaken to follow a common sense, simplified approach, I'm afraid we'll see most of the utilities drop out or continue on a very limited scale."

The seeming complexity worries Waggonhoffer, too. "We're trying to get smarter about the whole farming industry," he admitted. "Aluminum companies are easier to understand than agriculture. There are so many variables in farming."

As imperfect as the existing projects may be, they are already having an impact on the survivability of the region's farms. A combination of these exercises in efficiency should be able to cut farm use of electricity with only small losses in production. With seven percent of all employment in the region tied to either food production or food processing, the goal of keeping this industry thriving is critical to the overall economic health of the Northwest. ■

Weather station

MCS delay would prove costly to region

by Dulcy Mahar

A $200 million price tag — that's the finding of a preliminary study showing the likely cost to the Northwest region of delaying the model conservation standards just two years. The standards are energy-efficient measures proposed by the Northwest Power Planning Council for new electrically-heated homes and all new commercial buildings. Those jurisdictions which fail to adopt the standards by January 1, 1986, may incur a 10 percent surcharge on firm power purchased from the Bonneville Power Administration.

The study was conducted by the Council's power planning staff in answer to a request from several utilities to delay implementing the standards by two years — from 1986 to 1988. The preliminary figures will be checked out exhaustively and will be subject to public comment, according to Jim Litchfield, director of the power planning division. (See back cover to order the issue paper.)

To determine just what a two-year delay would mean to the region, the power staff calculated the cost of building a coal plant (the most likely replacement) to produce the same number of megawatts that would have been supplied by homes built to the standards during 1986 and 1987.

For example, the standards are expected to save the following amounts of electricity in their first two years depending on the Council's four forecasts*:

High — 100 mw
Medium High — 76 mw
Medium Low — 53 mw
Low — 27 mw

In the high forecast a new coal plant would be needed by 1987, a deadline which could not be met realistically. The plant would be needed by 2001 in the low forecast. The costs of the coal plant in each forecast were pro-rated so that they reflect only that portion of a plant required to replace the electrical power the standards would have made available to the region. For example, in the high forecast, the costs represent 100 megawatts or 20 percent of a 500 megawatt coal plant.

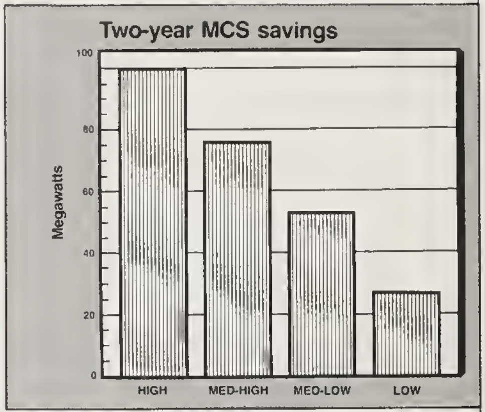
Given that breakdown, costs of replacing the energy savings of the standards with the output of a new coal plant would run:

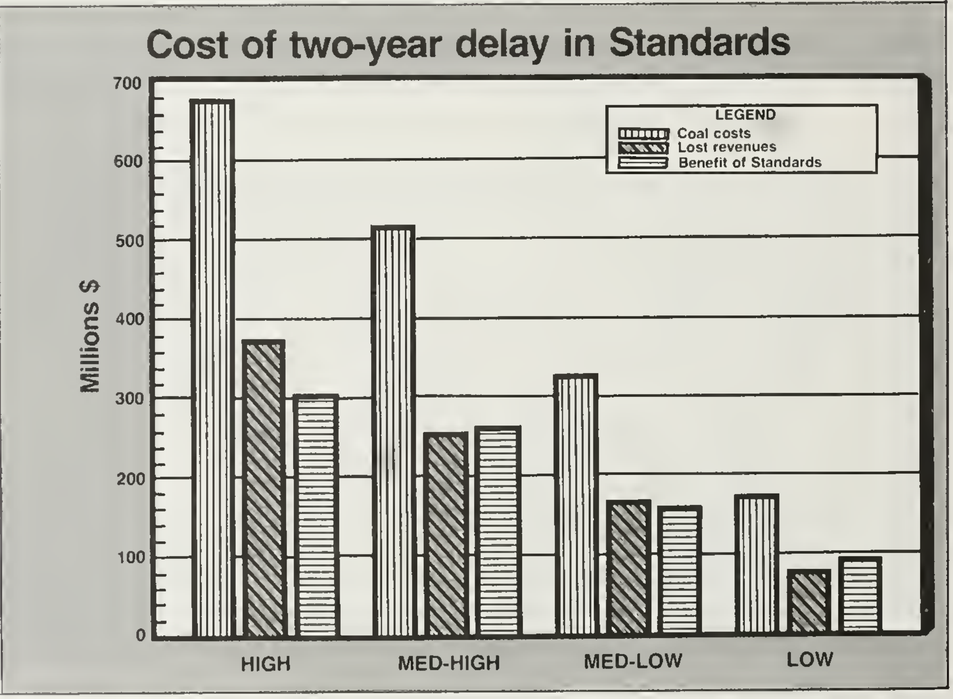
High — $677 million
Medium High — $517 million
Medium Low — $328 million
Low — $173 million

From these costs the staff subtracted the costs of lost revenues from the coal plant to get the net cost to the region's utilities of delaying the standards.

High — $303 million
Medium High — $262 million
Medium Low — $160 million
Low — $94 million

Given that the most likely scenario will fall between the medium high and medium low forecasts, the Council staff

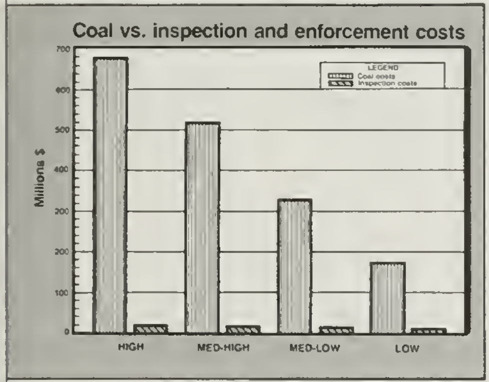




**The Council has a forecast range rather than a single forecast. That range runs from low to high with two intermediary forecasts – medium low and medium high – between. Resources are scheduled to meet any possibility within this broad range.*

estimated a delay of two years in the standards would cost the region $200 million.

The staff also calculated the costs of coal versus the utility inspection costs for the standards. In the high forecast, inspection costs would run approximately $15 million ranging to $4 million in the low forecast. Using the high range, therefore, for a $15 million investment a utility could save avoided costs of $677 million. In the low range, a $4 million investment would save $173 million. These avoided costs represent the costs of using coal to replace the equivalent amount of energy the standards would have saved.



Another calculation compared the costs of coal against the "society" costs of the standards for the two-year proposed delay period. Society costs refer to all costs (to ratepayers, utilities, homebuyers, etc.) of the model conservation standards.

This means that the region would realize a $259 million savings through the standards — as opposed to coal — in the high forecast. In the low forecast, the savings would be $60 million. Again, that is for a two-year period.

The energy savings from the model conservation standards alone over a 20-year period vary with each forecast, but all are significant, according to Litchfield.

High — 1573 mw
Medium High — 936 mw
Medium Low — 572 mw
Low — 284 mw

"If we can't achieve the standards and given everything else stays the same (i.e. WPPSS 1 and 3 are built), the Council will have to add 572 megawatts in the medium low," Litchfield explained. "This could mean major thermal investments."

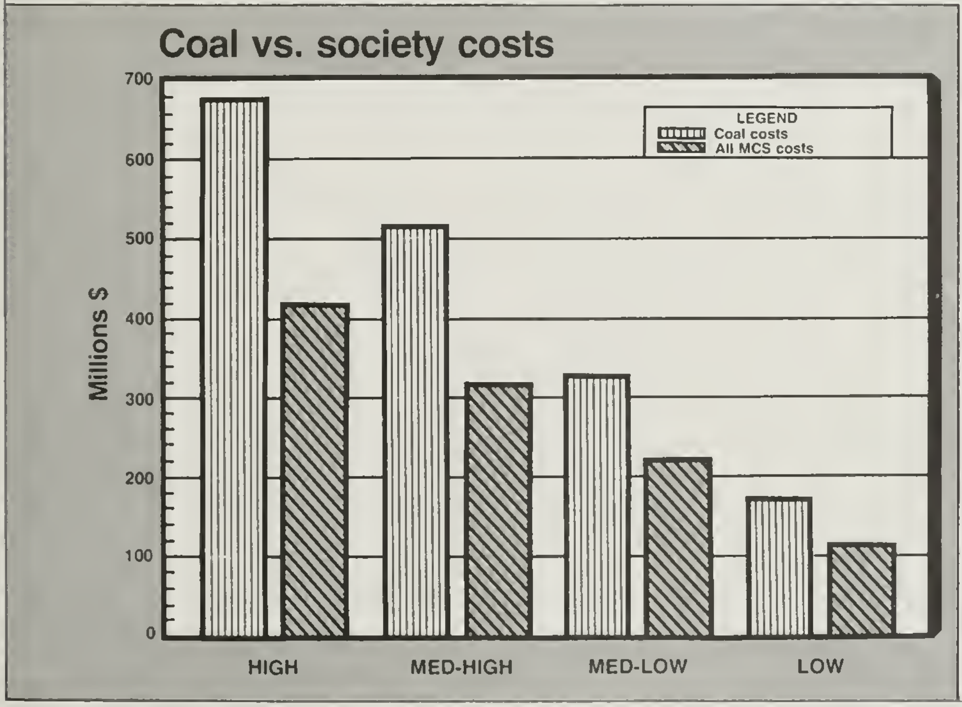
Taking the standards out of the regional power plan entirely also affects when the region will go from a surplus electrical power supply to a deficit in supply. Without the standards, the region will see deficits in:

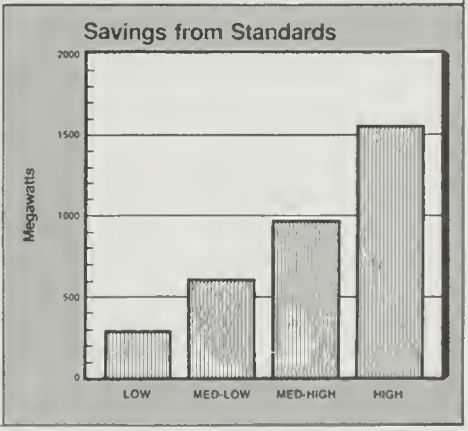
High — 1987
Medium High — 1989
Medium Low — 1993
Low — 1997

Litchfield also said his staff has done studies taking a home built to current standards and retrofitting it to meet the model standards. The analysis showed that, with the possible exception of storm windows, most retrofit features would not be cost effective to the region* because of the high fixed costs of auditing and inspection.

"These opportunities (the model conservation standards) are unique. You have to do it when the house is built. If you do, you get savings for the life of the house. If you don't, you have to build more expensive resources to serve the inefficient house," he said.

"The real question," according to Chuck Collins, Council chairman, "is not whether or not we should be weatherizing new buildings, but who pays. Codes put the costs on the homebuyers who get the direct benefits of energy savings. If we were to go to utility incentives, the region's ratepayers would pay — but they'd still save $200 million (by adopting the standards now)." ■





They could still be cost effective to the consumer.

It makes *Super Good Cents* to build it right

by Jim Nybo

Starting this month, billboards proclaiming the "Super GOOD CENTS" energy conservation program will be sprouting up throughout the Northwest. "Super GOOD CENTS" is a program launched by the Bonneville Power Administration to promote the construction and purchase of energy-efficient new homes built to the Northwest Power Planning Council's model conservation standards. It is a voluntary marketing program made available to electrical utilities who buy power from Bonneville.

In examining the resources that could be used to serve the electrical needs of the Pacific Northwest, the Council found that conservation — in the jargon of power planners — is regionally cost effective. That means it is as reliable as other sources of electrical energy available to the utilities of the region, but costs less. Other sources include, of course, coal and nuclear power plants, hydro power, wind power, gas combustion turbines as well as others.

But does conservation make sense to the consumer as well? Indeed it does, say both the Council and Bonneville. In fact, in the words of Bonneville's newest conservation program, buying energy efficient new homes makes "Super GOOD CENTS." In the 1983 regional energy plan, the Council called on Bonneville to offer a program that includes certifying and marketing homes which meet the standards and training for those in the shelter industry. "Super GOOD CENTS" is the keystone of these elements of the plan.

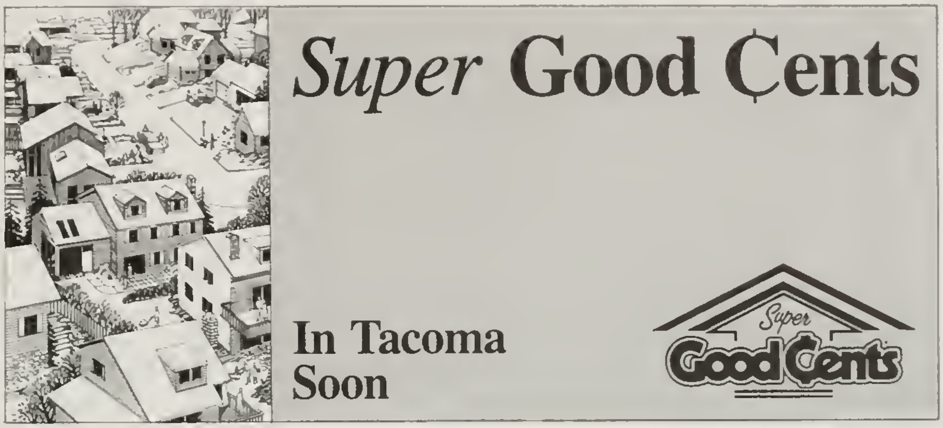
By participating in this voluntary program, homeowners can save up to two-thirds of their annual heating costs and live in a home that is warmer in the winter, cooler in the summer, and quieter all year round. Builders and realtors gain the advantage of a distinctive product in a tight housing market, and lenders are beginning to appreciate that energy savings translate directly into more income for the buyer. Electrical utilities benefit because efficient homes provide power at lower cost than alternatives and place less strain on the system during the coldest days of the year. The electrical utility is helped to expand or maintain its share of the home heating market because electrically heated homes cost less to maintain, thus making electricity a more attractive fuel source to the consumer.

In October, Bonneville held orientation meetings on the program around the region for electrical utilities. Utilities were told that the two major aspects of the regional "Super GOOD CENTS" program are an inspection and certification program to be carried out by the utilities, and a regional promotional campaign to be carried out by Bonneville in conjunction with the utilities.

Certification and inspection

Participating utilities will review builder plans, inspect homes during construction and after completion, and certify that the finished home complies with "Super GOOD CENTS" standards. The utility will be responsible for quality control and for promoting building, buying, and living in "Super GOOD CENTS" homes.

Some local government representatives have raised questions about how a utility inspection program relates to local building code enforcement. "Bonneville is encouraging utilities to invite local code officials to the technical training sessions," said Ernie Bonner, Bonneville's chief of the Consumer Products and Services Branch of Residential Conservation. "We will get local government association people involved in the utility training as well," he added. "In the utility curriculum there's a



Look for this billboard in Tacoma

special section on utilities getting informed and coordinated with the local building permit process."

Advertising

Bonneville's regional advertising campaign will include print, radio and television media along with direct mail and other means. For those utilities who have signed long-term Bonneville conservation contracts, Bonneville has offered to reimburse up to half of the utility's costs for local advertising. Bonneville will coordinate all advertising and promotion done to assure consistent use of the logo and slogans. The promotion campaign is expected to begin around May 1985, and will run through the 1986 and 1987 building seasons. According to Bonner, the detailed advertising plan will be developed over the coming months.

Training and education

Personnel from participating utilities will be trained in both the technical criteria for the "Super GOOD CENTS" home and in sales and marketing techniques. The technical seminar will include the Council's model conservation standards, acceptable construction techniques, and computer software for reviewing building plans. According to Bonner, the sales and marketing training will concentrate on ways to motivate builders and ways to work with banks and realtors. The initial training will be conducted by Southern Electric International (SEI), the originator of the marketing program, and will subsequently be offered by the Northwest Public Power Association (NWPPA) on a regular basis. NWPPA will draw on Oregon's Energy Extension Service for technical training.

The basic package of products available to the utility includes manuals on construction, marketing, graphics, and advertising; guides for builders and home buyers; and a computer software package.

Bonneville is coordinating its State and Local Government Technical Assistance Program with "Super GOOD CENTS" to deliver training for builders and local code officials. From December through May, approximately 15 builder training workshops will be offered through state energy offices in the region. Bonner reports the states and NWPPA will coordinate these parallel training efforts, with participating utilities requesting builder training sessions from the states. Bonneville has told state energy agencies that the State and Local Government Technical Assistance Program will begin placing major emphasis on technical support of the standards.

Eligibility

Bonneville has purchased the right to use the "Super GOOD CENTS" name from 1984 through 1987. Bonneville will offer the rights to use "Super GOOD CENTS" to all utilities in the region during that period. Those utilities that have not signed long-term conservation agreements may participate in the seminars and training programs and may request technical and advisory support from Bonneville, but they will not be eligible for the partial reimbursement of their local advertising costs.

What about "GOOD CENTS"

SEI developed its efficient homes marketing program under the name "GOOD CENTS" for use by its member utilities in the Southeast. Because the program is a voluntary utility-based program, SEI has offered the "GOOD CENTS" program to electrical utilities throughout the country. Several investor-owned electrical utilities in the Northwest have signed a contract with SEI, and are offering the "GOOD CENTS" program in their service areas.

The principal difference between the two, besides the name and logo, is that the "Super GOOD CENTS" program markets homes that meet the Council's model conservation standards, while the "GOOD CENTS" home does not save as much energy. Both programs, however, are voluntary programs designed to encourage the construction and purchase of new electrically heated homes that are substantially more energy efficient than current building practices. ■

Super
Good Cents

Developing the river – protecting the future

Two studies will guide the way

Carlotta Collette photo

by Carlotta Collette

It's hard to tell the value of a river. It can be said that the Columbia and its tributaries produce more than 12,000 megawatts of energy, and that figure can be turned into dollars, which will tally up one value for one river system.

But there's another real value. It's in the old fish, whose numbers are badly depleted now. Certainly a river teeming with pink and silver salmonids has a value.

And a river to swim in, to sail on or camp beside, to irrigate a field with or carve an ancient history in the cliffs along its banks, those are all values to be reckoned. In the Northwest they all exist, and in some critical ways, they are values that conflict.

This fall, the Northwest Power Planning Council voted to begin two studies of all rivers and streams in the Pacific Northwest — the Hydro Assessment Study and the Cumulative Impacts Study. The first study will attempt to determine the value of each river system in terms of its potential for supporting fish and wildlife, recreational activities, cultural heritages and hydroelectric generating capability.

It will be used to rank potential hydro development sites according to their fish and wildlife effects and to identify areas where those effects would be so critical that the site should be protected from any development. The information contained in the study will help the Council determine how much cost-effective hydroelectricity is available to be integrated into its new 1985 power plan.

The region boasts over 250,000 miles of year-round rivers and streams. All of these will appear in the eventual matrix of values and concerns that will be one of the products of the study. In the future, if you want to build a dam anywhere in the Northwest region, you will be able to go to a computer, call up a map of the area you want to develop, and see on that map the effects on the fish runs and other wildlife your proposed dam will have. Some dams may be prohibited because they will come within the boundaries of "protected areas," a designation for particularly delicate habitats. Sites will be ranked into three categories.

Category I will describe those sites where hydroelectric development will have no significant adverse effect on fish and wildlife. Category II will cover those sites where hydroelectric development can be carried on if steps are taken to prevent potential damage to fish and wildlife habitats in the vicinity. Category III will designate those areas where hydroelectric development will seriously damage existing habitats or fish runs and should therefore not be permitted.

Part of the Northwest study is similar to one that was conducted in Maine. The Maine Rivers Study led to legislation prohibiting dam construction on certain rivers in that state. Other rivers were cleared for development when it was demonstrated that few long-term negative effects outweighed the advantage of the renewable resource of hydroelectricity. The Maine study was designed by the National Park Service.

It took many months and many people to come to an agreement about how to approach this project. There were issues about which values to explore, whom to delegate the work to and how to implement the findings once the study is completed. The Council's Hydropower Assessment Steering Committee (HASC) and other interested participants worked hard to generate ideas on the direction the study should take.

This committee includes members from the National Marine Fisheries Service, the Army Corps of Engineers, the Federal Energy Regulatory Commission, the Columbia River Inter-Tribal Fish Commission, the Northwest Indian Fisheries Commission, other tribes, the Pacific Northwest Utilities Conference Committee, the Bonneville Power Administration, the Bureau of Reclamation, fish and wildlife agencies from each state, small hydro developers and environmental groups.

The Northwest study is expected to take up to 15 months to complete at an estimated cost of $1.5 million. The study has been divided into two primary parts — anadromous fish, and all other river values — with a third section for identification of sacred and cultural Indian grounds.

The anadromous fish half of the study is being coordinated by the Council. The Council has hired Jack Damron, who most recently managed the Columbia River Estuary Data Development Program, to direct the compilation of data on the region's critical basins for migrating fish. "Many anadromous fish runs have been devastated by past hydropower development," commented Damron. "We can avoid this for future hydropower develpment by taking a more balanced approach that protects the most important stream reaches in the basin."

The remaining river values will be analyzed under the direction of the Bonneville Power Administration. This analysis will be carried out by each of the individual states. Everything from the endangered plants in a given area to its archaeological sites will be included in the studies.

In addition, a complementary study, the Cumulative Impacts Study, will be done to assess the collective effects of developing more than one hydro facility in a given river system. "In some cases a single dam on a river might not have serious effects on the salmon runs in that area," explained Peter Paquet, manager of project operations and development at the Council. "But, when you put several dams in that basin you might be looking at something more critical. Once we have criteria for evaluating each stream in the Columbia River Basin, we hope to be able to look at all the hydro development in a given reach and assess the impacts of all of them together."

For the Pacific Northwest, both the hydro assessment study and the cumulative impacts study will provide a reliable basis for future decisions regarding any hydroelectric development along the rivers in the region. ■

STATEMENT OF POLICY

STATEMENT OF POLICY CONCERNING ANTITRUST AND OTHER LEGAL CONSIDERATIONS RELATING TO TRANSFERS OF ELECTRIC POWER FROM PACIFIC NORTHWEST TO PACIFIC SOUTHWEST

This statement of policy is adopted with reference to the following facts:

A. Electric power generated in, but not required to meet the needs of, the Pacific Northwest region has for many years been marketed outside the region, particularly to purchasers in the Pacific Southwest. While such surplus power has been marketed both as "firm" power and "nonfirm" power, historically, and in large part because of the purchasing patterns of the Pacific Southwest purchasers, the bulk of such power has been sold as "nonfirm."

B. At the present time, the Bonneville Power Administration (Bonneville) has under active consideration and development certain actions, including development of a policy with respect to access to certain electric power transmission lines, commonly known as the "intertie," between the Pacific Northwest and Pacific Southwest, and development of a program of serving as an "agency" for the joint marketing of power by Pacific Northwest sellers to Pacific Southwest purchasers ("the proposed policies"). Such actions, if implemented, could (1) increase the ratio of "firm" to "nonfirm" sales of electric power by Pacific Northwest sellers to Pacific Southwest purchasers, and (2) by increasing the ratio of "firm" sales to "nonfirm" sales, increase the average per unit cost of electric power to Southwest purchasers.

C. A question has arisen as to the appropriate role and function of the Council in the development, adoption and implementation of the proposed Bonneville actions; and it is in order to clarify that role and function, both for the guidance of the Council's own staff and others, that this statement of policy is adopted.

Now, therefore, in consideration of the foregoing premises, it is hereby resolved as follows:

1. The sole interests of the Council in the proposed policies and the implementation thereof is (1) to promote, to the extent that the Council is responsible therefor, the purposes of the Pacific Northwest Electric Power Planning and Conservation Act of 1980 ("the Act") as defined in Section 2 thereof and (2) to assure that any policies which are adopted and implemented are consistent with both the Act and the Northwest Conservation and Electric Power Plan ("the Plan") including, in particular, Chapter 10, Paragraphs 15 and 16 thereof, and the Columbia River Basin Fish and Wildlife Program ("the Program").

2. The provision of Paragraph 1 notwithstanding, the Council (a) while favoring for the reasons set forth in the Plan the sale of "firm" power to the Pacific Southwest and the sale of "nonfirm" power in the Pacific Northwest consistent with the requirements of the Plan and the Northwest Power Act, takes no position whatsoever with regard to the actual price at which either "firm" or "nonfirm" power is sold by Pacific Northwest sellers to Pacific Southwest purchasers; (b) the Council advocates and will support the achievement of its goals only in so far as those goals are achieved by means consistent with applicable law including state and federal antitrust laws; and (c) will continue to work with other interested governmental agencies, including but not limited to the Bonneville Power Administration and appropriate state public utility commissions, to assure that any policies or programs ultimately adopted by the Bonneville Power Administration will advance the interests of the Council as described in Paragraph 1.

Adopted by the Council September 20, 1984.

COUNCIL PUBLICATIONS ORDER FORM

Please send me a copy of the following publications of the Northwest Power Planning Council.

☐ Columbia River Basin Fish and Wildlife Program (1984 revised edition, will be available in January 1985. Those who received the draft will automatically receive a copy.)

☐ Issue Paper on Losses, Goals, and Program Planning (Fish and Wildlife Program)

☐ Issue Paper on the Value of Increased Direct Service Industry Interruptibility

☐ Staff Report on Decision Analysis Modeling

☐ Issue Paper on Economic Forecasts and Assumptions

☐ Issue Paper on Direct Service Industry Load and Planning Assumptions

☐ Issue Paper on Effects of Electricity Prices on the Economy

☐ Issue Paper on Costs of Delaying the Model Conservation Standards

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